

Department of Chemistry Course Outline

SC/CHEM 1001 3.0 Chemical Dynamics Winter 2019

Course Description

This course complements SC/CHEM 1000 3.00 - with emphasis on chemical change and equilibrium. Topics include chemical kinetics; chemical equilibrium; entropy and free energy as driving forces for chemical change; electrochemistry; frontiers in chemistry. Three lecture hours per week, one tutorial hour per week, five three-hour laboratory sessions. One term. Three credits.

Prerequisites

OAC chemistry, 12U chemistry or SC/CHEM 1500 4.00 or equivalent. Course credit exclusions: SC/CHEM 1000 6.00, SC/ISCI 1202 3.00, SC/ISCI 1210 6.00.

Course Instructors and Contact Information

Section M Lecturer: Dr. Kyle Belozerov

Section N Lecturer: Dr. Trevor VandenBoer

Section O Lecturer: Prof. Robert McLaren

Section P Lecturer: Dr. Derek Jackson

Administrative Course Director: Dr. Derek Jackson

Contact for all course matters*: genchem@yorku.ca

First Year Chemistry Office: Chemistry Building (CB) 124, generally open 9 – 4 on weekdays

First Year Chemistry Secretary: Ms. Tsering Yangchen

** Please see policy on email etiquette below in the "course policy" section before sending an email*

Schedule

Lecture Schedule

Section M: Monday, Wednesday, Friday 11:30 AM – 12:30 PM, LAS A

Section N: Tuesday, Thursday 2:30 PM – 4:00 PM, ACW 109

Section O: Tuesday 7:00 PM – 10:00 PM, CLH L

Section P: Monday, Wednesday, Friday 11:30 AM – 12:30 PM, ACE 102

Tutorial Schedule

Section M: Thursday 8:30 AM – 9:30 AM, LAS A

Section N: Tuesday 4:30 PM – 5:30 PM, ACW 109

Section O: Tuesday 6:00 PM – 7:00 PM, CLH L

Section P: Thursday 8:30 AM – 9:30 AM, CLH L

Laboratory Schedule

Please refer to the Moodle site for the detailed lab schedule and room assignments. Labs run every other week throughout the term with students conducting one lab every other week for a total of five labs. Labs start either the week of January 14 or January 21 depending on lab section.

Evaluation

Midterm Exam 1:	17%*	Sunday February 3, 2019; 3:00 PM – 4:00 PM
Midterm Exam 2:	17%*	Sunday March 3, 2019; 3:00 PM – 4:00 PM
Midterm Exam 3:	17%*	Sunday March 24, 2019; 3:00 PM – 4:00 PM
Final Exam:	35%	Scheduled by Registrar's office during the exam period
Laboratory:	20%**	Throughout term, 5 evenly weighted lab experiments
Moodle Homework:	5%	Throughout the term
iClicker Class Polling	6%	Throughout the term

Potential Bonus Assessment up to 0.5%***

The midterm exams will consist of short answer and calculation-based questions. The format of the final exam will be announced to the class later this term. It will be comprehensive and cover all course material equally.

* The best two of three midterm tests will count towards your final grade (collectively worth 34% of your final grade)

** Both the lecture and laboratory components must be passed independently to pass the course

*** Details of the potential bonus assessment will be announced on Moodle

For more information on Moodle homework and iClicker polling, please consult the section on course policy.

Resources

Textbook and Manuals

Course Textbook: Tro, N.; Fridgen, T.D.; Shaw, L.E. *Chemistry: A Molecular Approach 2nd Canadian Edition*; Pearson Canada, Toronto, 2017. Can be purchased from the York bookstore in either hardcover or loose-leaf formats. Copies will also be placed on short term reserve at the Steacie library.

CHEM 1001 Lab Manual: Will be distributed (no cost) by your TA during your first lab meeting.

iClicker classroom polling

Available free to all York students and can be accessed from any device with an internet connection. Does not require a physical remote. Details on how to access for CHEM 1001 are found on Moodle under "Before the First Class".

Laboratory coat and safety goggles

You must bring a lab coat and indirectly-vented safety goggles (not glasses) to each lab. These materials can be purchased from the York bookstore. Ensure you are purchasing the correct equipment. Check Moodle for details on what is acceptable for the chemistry labs.

Course Moodle sites

This course has a Moodle site for each lecture session that will be updated frequently throughout the term. It is the primary access point for all course information and materials hence it should be visited often throughout the term. It is the responsibility of the student to ensure course announcements are received by email or checked frequently on Moodle. CHEM 1001 does not have a separate Moodle site for the lab component.

Learning Outcomes

A detailed list of all learning outcomes in CHEM 1001 will be available on the Moodle site and can be referred to anytime.

Course Content

The topics covered in lecture this term will include the following:

- Chemical Kinetics (Chapter 13)
- Chemical Equilibrium (Chapter 14)
- Acids and Bases (Chapter 15)
- Aqueous Ionic Equilibrium (Chapter 16)
- Gibbs Energy and Thermodynamics (Chapter 17)
- Electrochemistry (Chapter 18)

The lecturers will inform the students of what material will be covered on the midterms and the final exam.

In addition, there is prerequisite high school knowledge that is assumed (covered in Chapters 1 - 4). This material includes:

- Units of measurement and significant figures
- Logarithms and exponentials
- Assigning oxidation states
- Solubility rules and precipitates
- Solutions and molarity

This material will not be directly covered in lecture but may be reviewed as part of an online tutorial session hosted by the lecturers.

Course Policies

Email Policies and Etiquette

All inquiries (course material and administrative) should be sent to genchem@yorku.ca.

The subject line **must** include the course code, your lecture session and a brief indication of your inquiry (examples: CHEM 1001M – question on entropy ; CHEM 1001O – missed lab 3). **It is vital you include the course code since CHEM 1000 and CHEM 1001 run concurrently during the winter term and we need to know which course you are referring to.**

The body of your email **must** contain your full name and student number. This is essential since typical enrollments in CHEM 1001 exceed 1100 students and a student number is the best way to identify a unique student. All email correspondences should be as professional as possible, which means full sentences and proper grammar are more likely to be responded to promptly. Please do not use “text message lingo”.

Before sending an administrative inquiry, read the syllabus and check Moodle thoroughly to see if your question can be addressed there first.

Please give our course personnel up to 2 business days to respond to emails.

Missed Midterm Policy

All students are expected to attend all three midterms or receive a mark of zero. The only exceptions are for unexpected, serious situations such as severe illness or a family emergency.

Situations which do not warrant accommodation include (but are not limited to): schedule confusion, sleeping in, public transit delays, car problems, traffic jams, personal endeavours (such as jobs) and busy lives.

Students who miss a midterm exam are required to submit their documentation to Moodle within 7 days of the absence. A link will be provided where scans and electronic copies can be uploaded.

If the absence was due to a severe medical illness, students must see a physician *while still ill* (within 24 hours of the exam and ideally on the same day) so the physician can confirm the illness was of such severity that the exam could not be written. Physicians will not be able to confirm an illness if seen after the illness has passed and as such, that documentation will not be accepted. The **only** valid documentation from a physician is the York attending physician statement (APS) which can be downloaded from: <https://registrar.yorku.ca/pdf/attending-physicians-statement.pdf> and should be completed and signed by the physician. Other medical notes will not be accepted.

For other circumstances such as family emergencies, students should submit enough documentation to support that the midterm exam could not be written. Students may contact genchem@yorku.ca for guidance in special cases to determine what would be required.

If appropriate documentation is not submitted within 7 days of the missed midterm, a mark of zero will be assigned.

If the documentation is accepted, a makeup midterm exam **MAY** be offered. Students will be contacted and given information on the details of such an opportunity 7 days after the absence. **No** information on makeup midterms will be provided in advance of documentation being accepted. If a makeup midterm is offered but missed for any reason (including schedule conflicts), then the midterm will be the one dropped from the final grade (the other two will count as per the course evaluation scheme) or the 17% weight will be shifted to the final exam if more than one makeup exam is missed.

Important note: Missing a midterm without a legitimately documented reason will receive a mark of zero. If the other two are attended, then the zero counts as the worst of the three marks and will not count. However, if one or two additional midterms are missed (even with a legitimate reason), then the zero WILL count towards the final grade.

Missed Final Exam Policy

Students who miss the final exam are not automatically guaranteed a makeup. Students must petition for deferred standing to their home faculty (not to the course director) and the decision is made by a faculty committee. Details on this procedure will be made available on Moodle during the final exam period.

Typically, deferred exams are held a significant amount of time after the original exam due to the length of the petitions process and committee meetings. It is not uncommon for students to write a deferred exam during the next final exam period (i.e. August 2019 for an April 2019 exam).

Lecture Recordings

Each session lecturer will be deciding on whether or not their lectures will be captured and posted to Moodle. The lecturer will announce their policy at the start of term.

Photographs or video recordings of any portion of the lectures are not permitted. Images and materials presented are subject to Canadian copyright law.

Students may request to take audio recordings from their seat from the lecturer. Remember the lectures are the intellectual property of the professor and cannot be distributed without permission.

Reappraisal Requests

Students who believe the grading of a midterm exam was in error may submit a regrading request using Moodle after their papers have been returned. A deadline will be announced to the class, after which regrading requests will not be acknowledged. These requests must make specific reference to a *specific* question that requires attention, with reference to the posted answer key. Non-specific requests (such as simply requesting more marks without cause or obvious “fishing expeditions”) will not be accommodated.

The course lecturers will reappraise the work and their decision will be final. The resultant grade may be higher, lower or remain the same. The lecturers also reserve the right to inspect the entire exam.

In order to be fair and consistent across the entire class, individual grades are not negotiable. No “extra credit” assignments will be provided. Marks for midterm exams will not be “bell-curved” and students will not be ranked against their peers.

Students are responsible for checking their Moodle gradebook to ensure the marks being reported match those on the assessments. In the case of a clear clerical error, contact genchem@yorku.ca as soon as possible.

Moodle Homework

Overall, this course component will count as 5% of the overall course grade. Students will be required to complete 7 homework assignments on Moodle, with due dates spread throughout the term. Each assignment covers roughly a chapter of material and there are 10 questions per assignment. Each question is worth 1 mark, for a total of 70 marks over the term. There are no time limits on the homework as long as the due date has not passed. Students can access the questions as many times as desired and there is no requirement to complete the assignment on the first entry.

The homework assignments consist of a variety of question types, such as: multiple choice, matching, drag and drop markers, calculations, etc. The questions are randomly drawn from a pool so each student will get a unique version of the assignment. Most questions can only be attempted once, but some questions (usually those involving calculations) may be attempted five times. Any question can be submitted for grading anytime by clicking the “check” button on the question page. If a question can be attempted five times, the option to try again will be presented. Prior to the due date, the questions can be attempted in any order and students may leave and return to the assignment at any time. Questions that are not “checked” prior to the due date will be automatically submitted and graded. Correct answers will not be revealed until after the due date.

While 70 marks are available throughout the term, the overall score *will be determined out of 55*. In other words, students can miss up to 15 marks throughout the term (through unanswered or incorrect questions) and not lose any course marks. Marks above 55 will be truncated down to 55.

This policy accounts for illnesses, forgotten deadlines, busy schedules, internet connectivity issues and other obligations. Hence, *no accommodations for missed homework assignments will be offered*.

Requests for extensions will likewise be denied. The due dates will be posted on Moodle well in advance; it is the responsibility of students to keep track of these dates and adhere by them. The only exception would be technical issues with the Moodle site itself, but ultimately any decisions will be made the course director.

iClicker Classroom Polling

In CHEM 1001, clicker questions will be asked during lectures to assess students’ level of understanding or to address common misconceptions. This component is worth 6% of the final grade in the course. Students will be able to participate for free using any device with an internet connection (laptop, tablet computer or cell phone) using instructions provided on Moodle to obtain access. **Clicker questions only count for marks in the section you are officially enrolled in.**

No clicker questions up to and including January 16 will count for marks. After that date, only questions asked during lectures will count for marks, and never questions asked during tutorial sessions.

After January 16 and until the last day of class, students will have the opportunity to earn 1 raw mark per class, with the total number of possible marks dependent on their lecture session. *To obtain the raw mark, students must answer at least one polling question during that class, and it does not matter whether the answer is correct.*

After the last day of class, all raw marks are summed and used to determine the overall course grade, although the mark will be determined out of a *lower* number to account for (but not limited to) absences due to illness, forgotten phones, internet connectivity issues, technical malfunctions, religious obligations, etc.

Use the table below to determine the iClicker grading scheme based on lecture session:

Lecture Session	Number of lectures after January 16	Raw marks available	Final score will be determined out of
M	30	30	24
N	20	20	16
O	10	10	8
P	30	30	24

Final scores will then be normalized to form the 6% overall course grade. Marks above 6% due to the policy described above will be truncated to 6%. Students may use their iClicker accounts to keep track of their raw marks throughout the term. The percentage values reported by iClicker as well as attendance and absence values should both be ignored.

Example: A student in section N obtains 15 raw marks out of a possible 20 (5 classes were missed). Since the mark is actually determined out of 16, the actual total is 15/16, corresponding to 5.6% towards the final course grade out of a possible 6%.

Due to this policy, *we will not be accommodating missed polling marks for any reason* and any documentation to that effect will not be accepted for consideration.

University Policies

Academic Honesty and Integrity

York students are required to maintain the highest levels of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academichonesty-senate-policy-on>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to improve students' research and writing skills, and cope with university life. Students are expected to review the materials on the Academic Integrity website (<https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity>).

Universal Access and Equity

York University is committed to the principles of respect, inclusion and equality of all persons with disabilities across campus. The university provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation relating to teaching and evaluation methods/materials. These services are made available to students in all faculties and programs at York University.

Students in need of these services are encouraged to register with counselling and disability services (CDS) as early as possible to ensure that appropriate accommodation can be provided with advance notice. Students may wish to discuss the nature of their accommodations with their professor early in the term.

Many students registered with CDS are entitled to midterm and final exam accommodations such as extra time. These students must register and book their tests and exams with the Alt Exam Centre at York as soon as possible.

Additional information is available at the following websites:

Counselling and Disability Services: <http://cds.info.yorku.ca>

York Accessibility Hub: <http://accessibilityhub.info.yorku.ca>

Alternate Exam Centre: <http://altexams.students.yorku.ca>

Students with accommodation letters issued by CDS should submit them to the CHEM 1001 office in CB 124 or electronically to genchem@yorku.ca rather than to their lecturers.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents.

Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at https://registrar.yorku.ca/sites/registrar/files/pdf/exam_accommodation.pdf at least 3 weeks before the final exam and submitted to the course director.

For requests regarding midterm exams, requests must be received by the course director at least 2 weeks in advance (there is no equivalent online form).

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at : <http://secretariat-policies.info.yorku.ca/policies/disruptive-andorharassing-behaviour-in-academic-situations-senate-policy>