These sheets provide answers to most of your questions about the organization of the course. We suggest that, after reading them carefully, you keep them with your notes for future reference. The online version contains useful links and updates.

COURSE OBJECTIVES

Chemistry 1AA3 is an introductory chemistry course intended to:

- discuss chemical concepts, theories and examples of fundamental chemistry
- apply chemistry to current examples within the themes of health, energy, the environment, materials and chemical biology
- help develop skills needed to solve chemical problems (this largely takes place in the tutorials)
- provide some experience in the experiment-driven investigation of chemical questions (this largely takes place in the laboratory)

SECTIONS AND INSTRUCTORS

Dr. O. SHIROBOKOV – T, Th 13:30-16:30, BSB 147

The instructor facilitates the in-class sessions, which include, but are not limited to: presentation of some of the course material, interactive activities, demonstrations, and discussion. The instructors are also available for small group discussions during office hours, and may monitor the on-line postings.

LABORATORY COORDINATOR

Dr. L. DAVIS (ABB 121); davislj@mcmaster.ca

The laboratory coordinator oversees the teaching assistants, labs and tests for all sections of the course. Scheduling, permission and exemption issues for labs or tests should be addressed to her.

WHMIS 1A00

All students taking chemistry courses must complete (or have previously completed) this safety course presented by Environmental & Occupational Health Support Services (EOHSS). Please register through MOSAIC. The course will then appear as a module (with pass/fail test) in AVENUE.

ONLINE COURSE MANAGEMENT

CHEM 1AA3 will make use of AVENUE, an integrated set of tools for delivering course components over the Internet. Important announcements and updates are done through Avenue and students are responsible for checking the CHEM 1AA3 page daily.

AVENUE

Since AVENUE courses are maintained in a secure environment on the Internet, only students registered in CHEM 1AA3 have access to the materials. In order to login to AVENUE you need:
1. the internet address:  http://avenue.mcmaster.ca/
2. your user name: it is your MacID (if the Registrar has not yet added you to the electronic course list, we will not have your MacID on our database)
3. your password: you will be given a password when you sign-up for your MacID.

AVENUE can be accessed from your home or dormitory room or computer labs/libraries on campus.

http://www.mcmaster.ca/uts/lab_facilities/labs/lab_avail/hours.html

You will need to set up a proxy account with UTS to use the on-campus computer clusters. You can register for such an account online through MOSAIC. If you have any difficulties in the computer clusters, ask for help from a Student Consultant.

If you attempt to login to AVENUE and find that you are not registered under the expected user name and password, follow the steps described on the AVENUE support page. If your registration is delayed and you need early access to the website, contact an Instructor. Other AVENUE issues can be addressed to the IT help desk in the Mills library (2nd floor).

http://library.mcmaster.ca/content/it-help-desk

LABORATORIES

Labs are 3.0 hours in duration and held from 13:30 to 16:30 on Tuesday, Wednesday, and Thursday and 9:30 – 12:30 starting the week of June 27th. Students will have signed up for a section via MOSAIC. If you need a different section, visit MOSAIC to check for available space. Specific laboratory rooms will be assigned when students arrive for their first lab (all rooms are in the same corridor in ABB).

Safety: Students must be dressed from “neck-to-wrists-to-toes” in order to safely complete the labs…

- **Safety goggles** (available at the University Bookstore) must be worn at all times in the laboratory. You must have these goggles and your lab books, before your first scheduled lab experiment.
- Shoes must completely cover your feet. This includes the entire upper foot, toes and heels. Sandals, open-toed shoes, ballerina shoes (flats) and shoes with cut-outs or openings are not acceptable attire. Due to slipping hazards, shoes or boots with heels are strongly discouraged.
- Students must be wearing long pants or a long skirt. Shorts or capris pants are not acceptable attire for a laboratory environment.
- Students must have their arms covered either by wearing a long-sleeve shirt or a lab coat. A lab coat is highly recommended.

Students not dressed properly for the labs will not be permitted to join the lab and given a grade of zero for that day’s experiment. Consult your laboratory manual for additional information on what you will need before coming to your first laboratory

The laboratory mark constitutes 15% of the final Chemistry 1A03/1E03/1AA3 course mark. Students must complete and submit a report for at least 4 of 5 experiments to pass the course. Students missing 2 or more
experiments (excluding those with permission for missed work and completing a make-up lab) will not pass the course. Students missing one experiment without obtaining permission for missed work and completing a make-up lab will obtain a grade of 0 on the report.

In order to be allowed to do the experiments, all students must watch the Safety Video on AVENUE and pass the safety quiz associated with the video. THE SAFETY QUIZ will be available ON-LINE UNTIL June 23rd. Students who completed the quiz in the Fall 2016 or Winter 2017 term do not need to re-do the quiz.

LAB EXEMPTIONS

Students repeating Chemistry 1AA3 who want to be exempted from the lab program must see the Lab Coordinator by June 23rd. The criterion used for lab exemption is two-fold: completion of Chem 1AA3 at McMaster University within the last 4 years, and completion of all lab experiments. Lab exemptions will not be given to students who withdrew from the course. There is no partial exemption for some of the labs. There is no lab exemption granted on the basis of courses taken at another university. If the exemption is granted, the lab mark obtained previously will be used to calculate your final mark. Students must see the Lab Coordinator in ABB 121 by June 23rd to be granted a lab exemption!

TUTORIALS

Weekly tutorials are run by teaching assistants and concentrate on the development of problem-solving skills. They will start June 22nd with times posted on AVENUE. Tutorials are offered on a drop-in basis. New tutorial material is presented every session. Seating is on a first-come-first-served basis and tutorial attendance is highly recommended.

Tutorial questions and other resources will be found on AVENUE. If you wish to work on the tutorial questions, you must access and print them before attending a tutorial session. The solutions to tutorial questions will be posted on AVENUE at the end of each week.

The focus in tutorial sessions will be on the development of problem-solving skills, in the context of the tutorial questions provided each week. Questions about Mastering Chemistry work will not be dealt with in the tutorial session, and may be addressed instead during office hours (ABB 142 and ABB 121).

MASTERING CHEMISTRY

Chemistry 1AA3 will make use of Mastering Chemistry for online homework assignments. Mastering Chemistry provides tutorial style problems providing built-in hints based on student response (if incorrect). Access to Mastering Chemistry is bundled in the textbook package or available separately through the Campus Store. More information will be provided in class. Participation in the Mastering Chemistry homework assignments is strongly recommended, although optional (see p.5).
iClicker

Instructors will use the iClicker classroom response system for in-class questions. These questions will be graded, and may contribute 2% to your final grade. Participation in the iClicker questions is highly recommended although optional (see p. 5). Your grade on these questions will be derived in the following manner:

<table>
<thead>
<tr>
<th>% of questions correctly answered</th>
<th>Grade out of 2</th>
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<tbody>
<tr>
<td>80-100</td>
<td>2</td>
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<tr>
<td>65-79</td>
<td>1.5</td>
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<tr>
<td>50-64</td>
<td>1</td>
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<tr>
<td>40-49</td>
<td>0.5</td>
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<tr>
<td>&lt; 40</td>
<td>0</td>
</tr>
</tbody>
</table>

The purpose of these questions is to address common course concepts and to encourage pre-class preparation and in-class engagement. Your instructor will provide more information in class on the use of iClickers and how to register your iClicker. Please note: when registering your Clicker please use your MACID (*not* your student number).

QUIZZES, HOMEWORK, TESTS AND EXAMINATIONS

Quizzes: Two timed quizzes (30 min) will be available for students the week of the term tests. Quizzes 1 and 2 will be open until Wednesday, July 4th and July 19th, respectively.

Homework: CHEM 1AA3 will make use of Mastering Chemistry for online homework assignments (HW). Mastering Chemistry provides tutorial style problems providing built-in hints based on student response (if incorrect). Access to Mastering Chemistry is bundled in the textbook package or available separately through Pearson Education Widget on the CHEM 1AA3 AVENUE page. More information will be provided in class. Participation in the Mastering Chemistry homework assignments is strongly recommended, although optional (see final mark calculation).

Tests: Two Term Tests are scheduled on the following days:

Test 1: Thursday, July 6th, 2017, in-class, 90 min

Test 2: Thursday, July 20th, 2017, in-class, 120 min (cumulative)

Final Exam: Thursday, August 3rd, 2017, in-class, 150 min (cumulative, mandatory)

Pre-existing conflicts should be discussed with the laboratory coordinator a minimum of 1 week in advance of the test date.

REQUESTS FOR RELIEF OF MISSED ACADEMIC TERM WORK

If you are absent from the university for a minor medical reason, lasting fewer than 3 days, you may report your absence, without documentation, using the McMaster Student Absence Form. Absences for a longer duration or for other reasons must be reported to your Faculty/Program office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to davislj@mcmaster.ca.
Contact Dr. Davis as soon as possible by visiting during office hours in ABB 121 to learn what relief may be granted for the work.

**Students must complete a minimum of 75% of the course work to obtain credit for CHEM 1AA3.** This 75% must include the final exam and laboratory components. There are no make-up quizzes or tests. Missed labs must be completed at a later time (scheduled at the end of term) to obtain credit. Request for make-up lab registration must be received before March 29th, 2017.

The MSAF on-line, self-reporting tool cannot be used to apply for any missed final examination or its equivalent. See *Petitions for Special Consideration* in the Undergraduate Calendar.

## CALCULATION OF FINAL MARK FOR THE COURSE

Because the Mastering Chemistry and iClicker components of the course may be considered optional, for each student the final grade will be calculated according to each of the four weighting options shown below, and each student will receive the highest grade of the four calculated grades. In this way a grade may include either, both or neither of the Mastering Chemistry and iClicker components.

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
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</thead>
<tbody>
<tr>
<td>iClicker Questions</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Avenue Quizzes</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
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<tr>
<td>Mastering Homework</td>
<td>4%</td>
<td>4%</td>
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<tr>
<td>Labs</td>
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<tr>
<td>Term Test 1</td>
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<td>Term Test 2</td>
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<td>Final Exam</td>
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<td>42%</td>
<td>44%</td>
<td>46%</td>
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<td>Total</td>
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</table>

**Note 1:** Students must complete and submit a report for a minimum of 4 laboratory experiments to pass the course.

**Note 2:** Students must complete a minimum of 75% of the course work to obtain credit for CHEM 1AA3. This 75% must include the final exam and laboratory components.

**Note 3:** The instructor(s) and university reserve the right to modify elements of the course during the term. The university may change dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

**CALCULATORS**

The two term tests and the final examination all require a calculator. THE ONLY ACCEPTABLE CALCULATOR IS THE CASIO FX 991, available at the bookstore. NO OTHER CALCULATOR IS PERMITTED DURING TESTS AND EXAMS.
REQUIRED ITEMS

• The Textbook for the course is General Chemistry, 11th edition, by R.H. Petrucci. The text is bundled with a solutions manual and online access to Mastering Chemistry/self-study area. This package can be purchased at the Campus Store during the first week of classes.

• CHEM 1A03/1E03/1AA3 2016/2017 Laboratory Manual: (Hayden – McNeil) with carbonless sheets must be purchased from the Campus Store. No other manuals will be acceptable.

• Safety goggles (~ $12) may be purchased from the Campus Store. Lab coats are strongly recommended.

ALSO RECOMMENDED

• i-Clicker classroom response system can be purchased from the bookstore. (~$40)

• Access code for the Mastering Chemistry website (bundled with new text packages) or available through the Mastering Widget on the homepage for the CHEM 1AA3 Avenue page.

COURSE CONTENT

• Relevant sections from Chapters 1 – 10, 13, 15, 16, and 19.1-19.4 are Assumed Knowledge from Chemistry 1A03/1E03 (as per the course outlines). These topics will not be discussed in class but will figure in the quizzes, term tests and final examination, where appropriate to the current material. It is your responsibility to review this material as needed.

• The Chapters and Sections listed below (from Ch 17, 20, 12, 26, 27 and 11), as well as additional material used in class to support the themes of health, energy, environment, materials and special examples in the field of chemical biology, represent the Core Course Content common to all sections of Chem 1AA3. This material will be covered in the common quizzes, term tests and final examination.

• Laboratory Experiments are a formal part of the course content. The term tests and final examination will include questions related to the laboratory material.

Preliminary course outline: This outline is subject to change; any changes will be announced in class and posted in AVENUE.

Chapter 17 Additional Aspects of Acid-Base Equilibrium
17-1 Common-Ion Effect in Acid-Base Equilibria
17-2 Buffer Solutions
17-3 Acid-Base Indicators
17-4 Neutralization Reactions and Titration Curves
17-6 Acid-Base Equilibrium Calculations: A Summary

Chapter 20 Chemical Kinetics
20-1 Rate of a Chemical Reaction
20-2 Measuring Reaction Rates
20-3 Effect of Concentration on Reaction Rates: The Rate Law
20-4 Zero-Order Reactions
20-5 First-Order Reactions
20-6 Second-Order Reactions
20-7 Reactions Kinetics: A Summary
20-8 Theoretical Models for Chemical Kinetics
20-9 The Effect of Temperature on Reaction Rates
20-10 Reaction Mechanisms

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20-11 Catalysis

Chapter 12 Intermolecular Forces: Liquids and Solids
12-1 Intermolecular Forces
12-2 Some Properties of Liquids
12-3 Some Properties of Solids
12-4 Phase Diagrams

Chapter 26 Structures of Organic Compounds
26-1 Organic Compounds and Structures: An Overview
26-2 Alkanes
26-5 Alkenes and Alkynes
26-7 Organic Compounds Containing Functional Groups
26-8 From Molecular Formula to Molecular Structure

Chapter 27 Reactions of Organic Compounds
27-1 Organic Reactions: An Introduction
27-2 Introduction to Nucleophilic Substitution (NOTE: exclude solvent effects and factors affecting nucleophilicity)
27-5 Introduction to Addition Reactions: Reactions of Alkenes
27-7 Reactions of Alkanes
27-8 Polymers and Polymerization Reactions (NOTE: Chain Reaction Polymerization only)

During the discussion of Ch 26/Ch 27 material we will also incorporate the following topics from Ch 11:

Chapter 11 Chemical Bonding II: Additional Aspects
11-1 What a Bonding Theory Should Do
11-2 Introduction to the Valence-Bond Method
11-3 Hybridization of Atomic Orbitals (note: exclude sp^3d or sp^3d^2 hybrid orbitals)
11-4 Multiple Covalent Bonds

Special Unit: Chemical Biology

– see class notes and selected concepts from Petrucci as indicated in the class notes.
SENATE POLICY STATEMENTS

All students should read and become familiar with the Statement on Student Academic Responsibility and the Academic Integrity Policy as found in the Senate Policy Statements distributed at the time of registration and available in the Senate Office. Any student who infringes on these resolutions will be treated according to the published policy.

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty.

The following illustrate only four of many forms of academic dishonesty:

- Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained;
- Copying or using unauthorized aids in the laboratory exercises;
- Improper collaboration on group or individual work;
- Copying or using unauthorized aids during tests and examinations.

Copyright Policy: In this course you will have access to material that is subject to copyright laws. This includes (but is not limited to) the textbook, solutions manual and all resources developed by the instructors such as lab manuals, demonstration videos, quizzes, assignments, tutorials, tests, class notes, class slides and web modules. Under no circumstance are you allowed to share or redistribute this material in any printed or electronic form without the explicit written consent of the copyright holder. This includes posting any course material on Internet bulletin boards, course repositories, social networks, etc.

DISCRIMINATION POLICY

McMaster University is concerned with ensuring an environment that is free of all adverse discrimination. If there is a problem that cannot be resolved by discussion among the persons concerned, individuals are reminded that they should contact their Department Chair, or Human Rights & Equity Services, as soon as possible. Issues involving teaching assistants should also be brought to the attention of the Lab Coordinator.

STUDENT RESOURCES

There are many opportunities for students seeking any number of help opportunities while enrolled at McMaster. Please make yourself familiar with the services offered on campus.

Student Success Center which is on campus to engage students and alumni in diverse learning opportunities to support their academic, personal and professional growth.
http://studentsuccess.mcmaster.ca/

Student Wellness providing counseling and medical services including wellness education.
http://wellness.mcmaster.ca/

Student Accessibility Services offers various supports for students with disabilities
http://sas.mcmaster.ca/
CHEMISTRY 1AA3 Summer 2017: Information Sheets

FINDING CHEMISTRY ON CAMPUS
All lectures are held in the Burke Science Auditorium, BSB/147 (building 11). Labs, tutorials and all staff and instructors’ offices are in the Arthur Bourns Building ABB (building 25). This building also houses the main Chemistry office (ABB 156) and the chemistry tutorial room (ABB 136)

![Image of campus showing ABB, JHE, and BSB]

Chemistry 1AA3 Schedule – June-August 2017

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<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<td>June</td>
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<tr>
<td>Exp 1</td>
<td>26</td>
<td>Tutorial 1</td>
<td>27</td>
<td>28</td>
<td>29</td>
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<td>Review Tutorial</td>
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<td>Add/Drop Ends</td>
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<td>Test # 2: in-class</td>
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<td>August</td>
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<td>Makeup labs</td>
<td>31</td>
<td>Tutorial 11</td>
<td>1</td>
<td>HW 6 Due</td>
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<tr>
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<td>Make-up lab</td>
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<td>3</td>
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</tbody>
</table>

HW = Mastering Chemistry Homework Assignment

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