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| Chemistry 112016-17 Course Outline |

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Textbook Reference: BC Science Chemistry 11

**Course Description**

Chemistry 11 is an introductory course in which students will develop an understanding and appreciation for basic chemistry. Chemistry is the branch of science concerned with matter – the stuff that has mass and occupies space. The course will cover major ideas and discoveries made over the past two hundred years concerning the composition and properties of matter and the changes that matter undergoes. By the end of the course, students will become better a critical thinkers and be able to connect chemical theory with observations made on the interactions of matter and energy. Students will develop the skills to work with chemicals and various laboratory equipment safely and with confidence. They will also learn how to write formal science lab reports in preparation for Chemistry 12 and university.

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| Unit | Topic |
| 1 | Nomenclature  |
| 2 | Chemical Reactions |
| 3 | Physical Properties & Changes |
| 4 | Significant Figures & Measurement |
| 5 | The Mole |
| 6 | Stoichiometry |
| 7 | Gas Laws |
| 8 | Atomic Theory |
| 9 | Solution Chemistry |
| 10 | Organic Chemistry |

**Assessment**

A combination of evaluation methods will be used for assessment. This combination includes testing, quizzes, laboratory work, homework assignments, projects, in class observations, and others.

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| --- | --- | --- | --- | --- | --- |
| Term Grade |  | Final Grade |  | A | 86 - 100% |
| Item | Weight |  | Item | Weight |  | B | 73 - 85% |
| Quizzes | 20 |  | Term Grade | 70 |  | C+ | 67 - 72% |
| Assignments/Labs/Projects | 35 |  | Final Exam | 30 |  | C | 60 - 66% |
| Tests | 45 |  |  |  |  | C- | 50 - 59% |
|  |  |  |  |  |  | F | 0 - 49% |

The Collingwood ‘Work Habits for successful learners’ will be used throughout the year to assess work habits.

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| **Work Habits for Successful learners** | **Fully Meeting** |  **Meeting** | **Minimally** **Meeting** |  **Not Yet Meeting** |
| **RESPONSIBILITY** | **EXEMPLARS OR CRITERIA** | **FM****(ALWAYS)** | **M****(MOSTLY)** | **MM****(INCONSIS-TENTLY)** | **NYM****(SELDOM)** |
| **Punctuality** | On time for class |  |  |  |  |
| **Preparedness: materials** | Prepared for class  |  |  |  |  |
| **Completion of in-class assignments**  | On task and completes work on time |  |  |  |  |
| **Respect for work** | Respects the quality and authenticity of work |  |  |  |  |
| **Homework** | Homework is completed  |  |  |  |  |
| **Catches up missed work** | Catches up on missed work  |  |  |  |  |
| **ATTITUDE** | **EXEMPLARS OR CRITERIA** | **FM****(ALWAYS)** | **M****(MOSTLY)** | **MM****(INCONSIS-TENTLY)** | **NYM****(SELDOM)** |
| **Attitude (overall)** | Engaged and interested in learning  |  |  |  |  |
| **Participation in class**  | Participates and/or contributes to class  |  |  |  |  |
| **Team work** | Acts as a leader and works well with others |  |  |  |  |
| **Respect for others** | Respectful and encouraging of other students and their work |  |  |  |  |
| **Following instructions** | Listens and follows teacher instructions  |  |  |  |  |
| **INDEPENDENCE** | **EXEMPLARS OR CRITERIA** | **FM****(ALWAYS)** | **M****(MOSTLY)** | **MM****(INCONSIS-TENTLY)** | **NYM****(SELDOM)** |
| **Effort** | Puts forth energetic and vibrant effort  |  |  |  |  |
| **Time Management** | Manages time well, able to work without direct supervision |  |  |  |  |
| **Extra Help** | Seeks extra help when needed |  |  |  |  |
| **Initiative** | Willing to ask for assistance and help others |  |  |  |  |
| **Risk Taking** | Demonstrates a high degree of willingness to take chances |  |  |  |  |

**Critical Thinking**

The Science Department considers the development of the critical thinking skills of our students to be essential to their success in science and in life. Critical thinking is a complex process with many essential facets. In order to address this complexity, there are areas of focus for each grade. These are indicated in the table below. As students progress through these grades, they will continue to master the skills from earlier grades. The skills chosen as a focus for later grades will also not be ignored in the earlier grades. Students will be encouraged to assess their own critical thinking skills and will increasingly develop skills to tackle complex scientific issues.

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| Grade | Critical Thinking Skills |
| 7 | Ask pertinent questions |
| 7 | Adjust opinions when new facts are found.  |
| 7 | Admit a lack of understanding or information where necessary |
| 8 | Look for evidence |
| 8 | Examine problems carefully |
| 8, 9 | Analyze data |
| 9 | Define criteria |
| 9 | Weigh evidence and draw reasoned conclusions |
| 10 | Reject incorrect or irrelevant information |
| 10, 11 | Assess statements and arguments |
| 10, 11 | Identify assumptions and biases |
| 11, 12 | Consider a variety of explanations  |
| 11 | Identify missing information |
| 12 | Suspend judgment until all facts have been gathered and considered |
| 12 | Synthesize concepts across disciplines |

**Assessment Policies**

Late Submissions

The Collingwood policy on late submissions will be used, as outlined in the table below:

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| Submission Date | Punctuality Deductions |
| 1 school day late | 10% off total assessment mark |
| 2 school days late | 20% off total assessment mark |
| 3 school days late | 30% off total assessment mark |
| 4-6 school days late | Assessment will be on pass-fail basis only |
| 7+ school days late | Assessment will be given a zero |

Instances do occur, however, when a late submission may be necessary. You will find that I am much more understanding if you ask for an extension in advance than if you ask on or after the date an assessment is due. You know your schedule so plan ahead! Late assessments should be handed to me directly to prevent their loss. Assessments should always be handed in as a hard copy. You may explain why your assessment is late with a small note attached to the assessment if you wish. All laboratory assignments must be submitted in order to receive credit for the course. In other words, until the assignment is completed, you will receive an “I” for any reporting periods.

Missed Tests

Students with an **excused** absence on the day of a test must be prepared to write the test upon their return, as outlined in the student handbook. All missed tests will be written at 7:10 AM on the Thursday immediately following the original test date.

Retests

Students who receive below 50% on a test are encouraged to write a retest. **Retests occur at 7:10 AM on the Thursday immediately following the return of the graded first attempt**. The final test mark will be the average between the first attempt and the retest.

Academic Dishonesty

Policies concerning academic dishonesty are outlined in the student handbook. Please be clear with what constitutes academic dishonesty and its consequences. Offenses on any assessment may result in a zero, with no opportunity for make-up.

**Class Expectations**

In each of your classes, it is expected that you will follow expectations listed in the student handbook. Special emphasis is placed on the following:

Respect

Students are expected to have a respectful attitude towards themselves, each other, the teacher, the classroom environment, and laboratory materials. This involves respecting classmates by listening to their ideas and addressing ideas with constructive criticism. It is important to challenge ideas, but equally important that the person presenting the idea is not belittled. Ideas can be criticised, but the person that raised the idea cannot be the focus of criticism. Respect also involves listening to and following instructions of the teacher. As a sign of respect, the teacher will encourage all students to participate and offer their questions, ideas, and opinions. Finally, students are expected to respect the classroom environment by acting in a matter way during lab experiments; keeping careful care of all equipment, materials and samples; and cleaning up after themselves.

Attendance

The level of success in a course is directly related to attendance and active participation. Students must inform the teacher of any planned absences, but this does not relieve students of the responsibility of completing and handing in missed assessments. A demonstration of excellent effort is to arrange for assessments before leaving. Trips and extracurricular activities are a privilege, and when a commitment is made to them, it is understood that extra work needs to be done so not to fall behind in classes. Unexcused absences will result in zeros for any assessment. Every absence must be explained with the proper certification.

Participation

Students should actively participate in classroom discussions, activities, etc. Part of participation involves being prepared for class, bringing all necessary materials to each class (pens, pencil, ruler, notes, calculator). Participation also involves arriving on time, being ready to work, and providing a positive element to classroom discussions. Participation means being curious. Participation also means that you are not doing other things – working on other courses, texting, etc. Participation means taking academic risks – asking that question, adding ideas to discussions, and trying to solve a problem even when unsure. Active participation during laboratory exercises means coming to the lab familiar with the safety precautions, procedures, and techniques. It is working quickly and efficiently, and not leaving all of the work to your partner, as well as cleaning your own and any shared equipment, materials and apparatus.

Homework

Homework will be assigned on a regular basis. Some students will require more time spent on homework than others, and that is okay. Not all homework will be assessed for marks, but it is highly recommended that all problems be attempted in order to be successful in the course. Many students believe that looking at questions and the answer key is sufficient for understanding, however, until an actual attempt at a problem without the answer key is made, you cannot be 100% sure that you know the material. Answer keys will be posted on Weebly, and students should always check their work. There is no value in doing problems without checking the answer. Accurate self-reflection about your level of understanding is crucial to learning.

# Calculators

A calculator must be brought to each class. A scientific calculator is highly recommended to make calculations easy and efficient. Cell phones will not be accepted as calculators on in class assessments (in class assignments, quizzes, tests, etc.). There is no guarantee that there will be spare calculators available to borrow.

Laptops, Tablets, and Cell Phones

While extremely useful for learning and research, laptops, tablets, and cell phones almost always hinder students from active learning. They are extremely distracting to the user and to surrounding students, and studies show that they almost always lower learning outcomes and the retention of text during studying. Do not use laptops, tablets, and cell phones during the lecture portion of class unless instructed to, however, you are free to use them as you wish during work periods. Wise time management is encouraged.

# Safety

Safety must pervade all areas of the classroom. "You expect Collingwood to be a safe place - physically safe, psychologically safe and safe from the persuasion of wrong doing" (from the parent/student handbook). Safety in the science classroom must be especially stressed due to the potential for danger from equipment and chemicals. Chemistry classrooms have high potential for injury and must be approached with maturity and caution. Safety in the science laboratory dictates certain behaviours. Do not run, perform dangerous actions or engage in horseplay in the lab. Students who are curious (highly encouraged!) and wish to perform an experiment and are not sure as to the safety of their actions must ask the instructor. In addition, be respectful of others by being appropriately quiet, and always clean up when finished.

Food and Drink

No eating is allowed during class as it is a lab space and safety must always pervade. Drinks are permitted if they are in a sealable container.

**Tutorials**

Tutorials are always available upon request. It is the student’s responsibility to seek help if concepts are unclear or if additional assistance is required. Students are strongly encouraged to get help as soon as difficulties arrive. Sooner is always better than later as misunderstandings tend to build quickly. I am dedicated in helping anyone who wants to learn and improve. Whatever your goal is for the course, as long as you are committed, I will do my absolute best to help get you there!