



Home of the *BLUES*

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A Tradition of Excellence

Chemistry 12 (IB) Course Outline

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Objectives:

Chemistry 12 (IB) is the continuation of a two-year experimental science programme dealing with the basic concepts and skills in the science of chemistry.

Group 4 aims

Through studying biology, chemistry or physics, students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterizes these subjects. The aims enable students, through the overarching theme of the Nature of science, to:

1. appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
2. acquire a body of knowledge, methods and techniques that characterize science and technology
3. apply and use a body of knowledge, methods and techniques that characterize science and technology
4. develop an ability to analyze, evaluate and synthesize scientific information
5. develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
6. develop experimental and investigative scientific skills including the use of current technologies
7. develop and apply 21st century communication skills in the study of science
8. become critically aware, as global citizens, of the ethical implications of using science and technology
9. develop an appreciation of the possibilities and limitations of science and technology
10. develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge

Textbook:

Brady, James E., et.al. Chemistry: The Study of Matter and its Changes, 2000, John Wiley & Sons, Inc., New York.

Optional textbooks:

Bylikin, S., Horner, G., Murphy, B., & Tarcey, D. (2014). *Chemistry: Course Companion*. Oxford: Oxford University Press.

Owen, S. M. (2015). *Chemistry: for the Ib diploma Second Edition*. Cambridge: Cambridge University Press.

Syllabus:

http://www.ibchem.com/root_pdf/Chemistry_guide_2016.pdf

Topics:

Semester 1: IGCH-12-S IB Chemistry (SL) 12

Topic 1: Gaseous Volume Relationships in Chemical Reactions	Ch. 10
Topic 6: Kinetics: The Study of Rates of Reaction	Ch. 13
Topic 7: Chemical Equilibrium – General Concepts	Ch. 14 & 17*
Topic 8: Acids and Bases	Ch. 15 & 16
Topic 9: Electrochemistry (Applications of Redox)	Ch. 19

Semester 2: MIDS-2APA: IB Chemistry 12 Semester 2

Topic 10: Organic Chemistry	Ch. 23
Topic 11: Spectroscopic Identification of Organic Compounds	Ch. 23
Exam Review	

Expectations:

This year, you will be expected to attend a 2.5 hour in-school class, and a 1-2-hour online class each week. It is expected that all students attend and complete the required homework prior to the classes. In addition, the required Individual Investigation experiments will be performed outside of scheduled class time – during the regular school day.

To be successful in this course, you should plan to study every night. It is your responsibility to be on time for each class and arrive with all necessary equipment. As well, you are expected to complete all assignments and labs. If you have any difficulties, please feel free to see me for extra help!

PMSS's **IB Academic Honesty Policy** is always expected to be followed. Please refer to it on the school's website, and make sure you understand all the expectations.

- You are expected to work on your own to complete all assignments. Lab partners may collect data together, but the presenting of the data, calculations, discussions, and conclusions in labs write ups must be completed independently. Working together constitutes academic dishonesty and is a form of plagiarism that is not acceptable.
- Plagiarism is not tolerated in any form. You may not use material from the internet, or print material, without referencing. Work done by a tutor and previous course work from a friend is considered plagiarism. Any work completed under these conditions will receive a zero, no exceptions.
- All lab work and assignments must be handed in on time, at the beginning of class. If something needs to be printed, it must be done ahead of time, and be ready to hand in at the start of class.
- You will receive 2 types of assessment on report cards, a percentage based on your understanding of the learning outcomes and a work habits grade. To receive a "G" work habit, you will need to complete all assignments on time and PARTICIPATE in class. Ask lots of questions, volunteer answers and be actively involved in discussions.
- Please feel free to send me questions by e-mail at night, I usually check my e-mail until about 10pm and will try to e-mail you back.

Evaluation:

Students will be assessed through a variety of assignments, labs, and tests. Each topic will be weighted to reflect the number of learning outcomes that the students must meet. The final IB grade will be on a 7-point scale, which will reflect only their performance on their exams in May of grade 12 and their internal assessment.

For report cards, the current estimated IB grades will be converted to a percentage based on the following chart, which has been approved by the BC Ministry of Education and adopted by BCAIBWS.

Current Estimated IB grade	Report Card %
7	96-100
6	90-95
5	86-89
4	76-85
3	70-75
2	50-69
1	0-49

Class marks:

Class work and Laboratory work

1. *Homework questions*

Students are expected to complete all assigned homework questions. These will either be checked in class, collected, and marked, or quizzed as an open-book *silent drill*. Irregularity in students' homework completion will be reflected in their work habit marks.

2. *Lab activities*

Lab reports will be assigned throughout this course. It is expected that students complete all lab questions, calculations, and conclusions on their own. Lab work is important to give students the hands-on skills and applications of the concepts they are learning in class and is a requirement to be successful in completing their Individual Investigation.

3. *Internal assessment progress*

Students will be asked to show progress for their internal assessment reports. These checks will be required to verify their work, and to keep students on track for the internal deadlines.

Tests and Quizzes

Quizzes will be used to assess students' progress within a unit of study. Tests will occur at appropriate points during the semester to evaluate students' understanding of the previous unit. Students will be notified before all forthcoming tests.

Assessment Objectives

The assessment objectives for biology, chemistry and physics reflect those parts of the aims that will be formally assessed either internally or externally. These assessments will center upon the nature of science. It is the intention of these courses that students can fulfill the following assessment objectives:

1. Demonstrate knowledge and understanding of:
 - a. facts, concepts, and terminology
 - b. methodologies and techniques
 - c. communicating scientific information.
2. Apply:
 - a. facts, concepts, and terminology
 - b. methodologies and techniques
 - c. methods of communicating scientific information.
3. Formulate, analyze and evaluate:
 - a. hypotheses, research questions and predictions
 - b. methodologies and techniques
 - c. primary and secondary data
 - d. scientific explanations.
4. Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

Assessment Outline:

Component	Overall weighting (%)	Approximate weighting of objectives (%)		Duration (hours)
		1+2	3	
Paper 1	20	10	10	1
Paper 2	36	18	18	2¼
Paper 3	24	12	12	1¼
Internal assessment	20	Covers objectives 1, 2, 3 and 4		10

