COURSE SYLLABUS FOR INTERNATIONAL BACCALAUREATE

DP CHEMISTRY

HIGHER LEVEL (HL) AND STANDARD LEVEL (SL)

Huron High School, 2727 Fuller Rd., Ann Arbor, MI. 48105

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Teacher page: http://www.chemistrygods.net/dp-chemistry.html

Our Mission Statement:

At Huron High School, the community of sciences promotes a culture of exploration through the development of inquiry, critical thinking, and a sustainable global perspective.

IB students will strive to embrace the following learning characteristics:

Inquiring: Why does a phenomenon occur? How can I find out? How can I test my idea?
Principled: Developing strong study habits, practices and efficient time-management.
Knowledgeable: The mastery of core topics, integrating ideas and making connections between different disciplines.
Open-minded: I will let the facts speak to me. I will consider many perspectives.
Thinking: Using logic, reason and intuition to formulate hypotheses.
Caring: I will display empathy towards my fellow students and global community members.
Communicating: I will think about the most effective way to express my ideas.
Risk-taking: I will push myself out of my comfort zone in order to grow stronger.
Balance: I will grow myself and attempt to become strong in many areas.
Reflective: How was my experience? Did I do my best? How can I improve next time?

DP Chemistry is a course designed to provide students with the opportunity to participate in an authentic college-level science experience. This course is composed of short lectures, peer to peer communication, group problem solving and student designed laboratory components. This course gives the students the opportunity to earn college placement credit, which may then be used as either college credit or a class waiver, depending on the student's DP test score and the policies of the college in question. All DP Chemistry students are expected to participate in the lab portions of the course. All DP Chemistry students are required to complete the Internal Assessment and to take the formal culminating exams, which will be offered at the end of the Senior year (HL/SL).

COURSE TOPICS:

I. Structure of Matter (the nucleus, nuclear chemistry, electronic arrangement of the atom, bonding, materials)
II. States of Matter (bonding, intermolecular forces, phase changes/diagrams, gases, properties)
III. Reactions (synthesis, single and double replacement, oxidation-reduction, acid/base, combustion, decomposition, disproportionation, multiple reactions specific to organic/atmospheric chemistry)
IV. Descriptive Chemistry (naming, reaction writing, use of symbols and energy diagrams, terminology, use of diagrams and models)
V. Quantitative Reasoning (stoichiometry, aqueous chemistry, process analysis, algebra, trigonometry, dimensional analysis, logarithms, measurement, uncertainty and significant figures)
VI. Physical Chemistry (Thermodynamics, Kinematics, Gas Laws, Periodicity and Trends, Polarity, IMFs, Molecular Geometry, Organic Structure and Equilibrium)
VII. Laboratory (includes classic laboratory experiments as well as multiple student designed experiments, including the mandatory Internal Assessment)

Two-Year DP Chemistry Course Outline

Year One

Measurement and Data
Nomenclature
Stoichiometry
Reaction Types
Oxidation/Reduction
Thermochemistry
Periodicity
Atomic Models
Quantum Theory
Chemical Bonding
Molecular Geometry
Polarity and Intermolecular Forces
Physical Properties of Solutions
Gas Laws
Begin the Internal Assessment (IA)

Year Two

Complete Internal Assessment (mandatory, 20% of total IB Grade)
Kinematics
Organic Chemistry
Quantitative Techniques and Spectrophotometry
Equilibrium
Acid/Base Chemistry
Coordination Chemistry
Electrochemical Cells
Nuclear Chemistry
Additional Topic C (Energy Acquisition and Usage)
IB Exams (Papers 1, 2, and 3)

CLASSROOM POLICIES:

1. TIMELINESS
   DP Chemistry is a fast-paced course and students will benefit from timely and frequent feedback on their progress. Resultantly, assignments should be completed in the assigned window of time.

2. MATURITY
   Due to the advanced nature of this course, students are expected to conduct themselves in a mature and responsible manner. Laboratory safety is a primary concern and a FAILURE TO FOLLOW LABORATORY SAFETY GUIDELINES WILL RESULT IN DISMISSAL FROM THE LABORATORY ACTIVITY. An opportunity to make-up the activity may, or may not, exist due to the fact that labs must fit in the allotted class time.

3. MISSING ASSIGNMENTS
   Students are responsible for all work missed due to absence and are expected to complete all make-up work, including labs, according to the following guidelines:

-Tests/Quizzes. All test dates are provided well in advance (3-10 days). Tests usually occur 2 or 3 days after the completion of a unit. Due to amount of time allowed for preparation, the expectation is that you will complete the test/quiz IN CLASS on the day you return. Mr. Collins must approve any exceptions to this policy.

-Laboratory. Students will be given 2-3 days to complete a pre-lab document prior to participating in the physical lab. If pre-lab documents are not completed, students will not be allowed to participate in the lab activity. Students will be expected to complete labs during lunch or after school if they cannot complete them in class.

You can simply call me, talk to me or email me before you return to class. It is YOUR responsibility

*ALL ABSENCES MUST BE EXCUSED IN ORDER TO MAKE-UP MISSED ASSIGNMENTS. EXCUSED ABSENCES ARE CALLED-IN FROM HOME AND ACCOUNTED FOR IN THE SCHOOL'S ATTENDANCE PROGRAM. IT IS THE STUDENT'S RESPONSIBILITY TO MANAGE/FOLLOW UP ON THEIR EXCUSED ABSENCES. THIS MUST BE DONE EXCLUSIVELY THROUGH THE MAIN OFFICE.

4. COMMITMENT
   Students are expected to contribute to each other's learning. Students should come to class prepared and should pay attention in class. Students who have not completed a pre-lab document prior to entering lab will be asked to sit out the assignment. It is imperative that the learning environment be safe, respectful and complimentary to all students. The formation of study groups is encouraged and students in the past have greatly benefited from collaborative efforts. However, it is very important that the actual homework and lab reports be your own.

5. ACADEMIC FRAUD
   Plagiarism is presenting someone else's ideas or work as your own. When labs are completed in teams, the reports are expected to have the same data, but they should differ in terms of discussion, conclusions, and interpretations. Students who supply answers or allow other students to copy their work are every bit as responsible as those who are doing the cheating. NO STUDENT WILL BE GIVEN CREDIT FOR AN ASSIGNMENT INVOLVING ACADEMIC DISHONESTY. These students will also be reported to their parents and to a school administrator. *See Code of Ethical Behavior and the IB Ethics Document.

LABORATORY GUIDELINES:
DP Chemistry labs will take place during the student's class period. Due to the shortened class length many of these activities will take place over multiple days. Many traditional labs will be approached via inquiry and these activities require an increased commitment from the student. Occasionally, we may have in school "laboratory field trips" where the students are in lab for half of the day or the entire day. Students will be required to maintain a laboratory notebook and complete formal and informal laboratory reports. Many portions of lab will be uploaded to an academic software application for organization. Special attention must be paid to the format of the lab write-up and to observations. How can one conclusively state what happened if it is not supported with data and observations?

TESTS AND QUIZZES:
Major tests and quizzes will be announced several days in advance, however short quizzes on current material will often occur unannounced and students should come to class prepared. It is imperative that the assigned reading list and practice problems are completed in a timely manner. All major tests will include multiple choice and/or short answer essays/calculations. Any student taking a make-up test can expect an alternate test format. All formal IB written exams will be taken at the end of year two. They will be graded in alignment with a standardized rubric.

GRADING:

There will a course grade (letter and percentage) that is given by the instructor*. It will be incorporated into the student's g.p.a. This grade will reflect the student's comprehension of course topics, global connectivity and the laboratory.

There will also be an IB Grade that becomes part of a student's IB Diploma Portfolio. In DP Chemistry this grade is based on the following *mandatory* assessments and projects:

Standard Level (SL)		Higher Level (HL)	
Paper 1:	20%	Paper 1:	20%
Paper 2:	40%	Paper 2:	36%
Paper 3:	20%	Paper 3:	24%
Internal Assessment (IA):	20%	Internal Assessment (IA):	20%

***INDIVIDUAL ASSIGNMENT GRADES** = (points earned ÷ total points) x 100

***OVERALL MARKING PERIOD GRADES** will be assessed via the following weighted categories.
-Laboratory: Lab Assessments, Lab reports 40%
-Classroom Tests and Quizzes 60%

***SEMESTER GRADES** will be based upon the following format:
1st/3rd Marking Period + 2nd/4th Marking Period = 80%, Cumulative Semester Final = 20%

***GRADE TOTALS** will be based upon the following percentages:

A	93.0 - 100.0%
A-	90.0 - 92.9%
B+	88.0 - 89.9%
B	83.0 - 87.9%
C+	78.0 - 79.9%
C	73.0 - 77.9%
C-	70.0 - 72.9%
D	63.0 - 67.9%
D-	60.0 - 62.9%
D+	68.0 - 69.9%
F	0 - 59.9%

Grading curves or statistical shifts will rarely be used. If a curve is used it will be based on the highest score(s) out of ALL DP Chemistry students. This data will determine the total points for an exam.
Final Grade Percentages are final. Your score will fall within one of the percentages stated above. There will be no rounding of final semester grades. An 89.9% is a B+!

Test Corrections:
Test corrections can be completed to raise a test grade from below 70% up to a 70% grade (C-). Test corrections can be completed two times per semester on a date or dates specified for each test. See test corrections document for details. This corrections policy applies to unit exams. It does not apply to quizzes, labs or the semester final exam/semester final project.

Expectations:
I consider the school year, marking periods and semesters to be framed by their starting and end dates.

If a student has issues related to curriculum or grades, it is best that they contact me in person. I would prefer to have a face-to-face exchange where we can really communicate about class concepts or grading decisions. These are difficult discussions to have over e-mail as it is often important to see graphics, emotions, math or examples. These are also difficult discussions to have as a second party exchange (e.g., A parent initiates and participates in the discussion only to explain it to the student. Many nuances and intentions are missed in this case.) I also believe upperclassmen in a college- equivalent course should learn to advocate for themselves in a productive way. The student should initiate all discussions related to grades in a timely manner. It is important to initiate a discussion about grading BEFORE the end of the first semester and BEFORE the completion of the school year.

Times I am available for help:
1. At the beginning of lunch Monday through Friday.
2. During 8th period on most Mondays and Tuesdays. I can potentially meet 8th period on Friday as well, but due to time limitations it is less likely. When in doubt – ask.

LETTERS OF RECOMMENDATION
After the completion of the second semester (year 1), I will have a very good feeling about all students with regard to academic ability and commitment. I will have graded multiple tests and labs as well as observed students in the lab setting. Hopefully, I will have had in-depth discussions with each student at this point. Upon the completion of the year, I will choose approximately 25% of my students to recommend. They will be informed of this decision and a description of the recommendation process in an email. I am mainly looking for the following themes: academics, problem solving, responsibility, personality, and college readiness. I must feel comfortable recommending you to a school based on your academic ability and personality. I will not recommend students who simply have good grades.