** *DP IB HL Chemistry*** 

**Instructor Information**

*Instructor:* Mr. Darko, B.Sc., M.Ed. *Phone Contact:* (704) 290-1520

*Classroom:* F210 *Email Contact:*[prince.darko@ucps.k12.nc.us](mailto:prince.darko@ucps.k12.nc.us)

**Tutoring**/Office Hours**: -** By appointment

**Class Wish List-** *Tissue, hand-sanitizer, dish and/or hand-washing soap, paper towels, any sanitary item. Any contribution will be greatly appreciated!*

**IB Chemistry HL Summary:** This is a second year chemistry class designed to prepare you for the IB Chemistry HL exam. Topics include Stoichiometry, Atomic Structure, Periodicity, Chemical Bonding and Structure, Energetics and Thermochemistry, Chemical Kinetics, Equilibrium, Acids and Bases, Redox Processes, Organic Chemistry, and Measurement and Data Processing and Analysis. We will also study Option D: Medicinal Chemistry

**Learning Outcomes:** At the end of the year, students will be able to

* Use safe laboratory procedures
* Write a formal lab report
* Have an understanding of and be able to apply aspects from each of the main IB Chemistry HL Topics:
  + Stoichiometry
  + Atomic Structure
  + Periodicity
  + Chemical Bonding and Structure
  + Energetics and Thermochemistry
  + Chemical Kinetics
  + Equilibrium
  + Acids and Bases
  + Redox Processes
  + Organic Chemistry
  + Measurement and Data Processing and Analysis (throughout the year)
* Complete an Internal Assessment of your design and associated write-up
* Have an understanding of Option D: *Medicinal Chemistry*

**Materials Needed for Class:**

* Dedicated 3-ring binder
* Paper for taking notes
* Pencils and/or pens
* 3x5 notecards, lined or blank
* Composition Notebook for lab work
* Scientific Calculator

Textbook: *IB Chemistry Course Book: Oxford IB Diploma Programme.* Brian Murphy, Gary Horner, David Tarcy, and Sergey Bylikin

**Grade Distribution:**

Summative Assessments

* Unit Tests (35%)
* Lab Reports (25%)
* Final Exam (20%)

Formative Assessments

* Classwork/Quizzes/Homework/Participation (20%)

**Grading Scale:**

A: 90% - 100%

B: 80% - 89%

C: 70% - 79%

D: 60% - 69%

F: < 60%

***Academic dishonesty will NOT be tolerated!***

**Internal Assessment (IA)**

During your IB chemistry course, you are expected to carry out an individual scientific investigation, sometimes known as an exploration. This must be written up as a full report, and contributes to you final assessment on the course.

The investigation will be based on a topic of your own interest, and have a purposeful research question and scientific rationale. Your approach and methodology may rely on the collection of primary data through experimental work, or it may involve analysis of secondary data. Possibilities include the use of spreadsheets for analysis and simulations, extraction and analysis of data from a database, or the use of open-ended simulations. The investigation is marked according to the same five criteria, which are summarized below. Note the following general points:

* The written investigation is marked by your teacher (internally).
* The reports of a sample of students from your class will be re-marked by the IB, a process known as moderation, which ensures that the same standards are applied across all candidates.
* The mark awarded for you investigation contributes 20% towards you final IB result.
* The investigation is expected to take approximately 10 hours to complete.
* The investigation should be about 6 to 12 pages in length in regular font size.
* The investigation can be based on a topic within the course content, or it can be on extension material beyond the topic specifications in the IB Chemistry guide.

The investigation should provide clear evidence of the knowledge and skills that you have acquired with respect to the Nature of Science, and an awareness of the aims of the course. You also have the opportunity here to demonstrate the attributes of the IB learner profile.

***\*See the IB Chemistry Guide found on this class home page for additional information.***

**Attendance and Late/Missing Work:**

Students are expected to be in class on a regular basis. It is the student’s responsibility to find out missed assignments and announcements from the instructor. Students who are present on the day an assignment is missed, or if an absence is unexcused, ***late work will be penalized by 50%.*** Half credit will be given up to 5 school days after the original due date.

***Beyond 5 days, late work will be accepted with feedback*** ***provided but no credit will be given.***

**Classwork:**

Students are required to take notes along with lecture. PowerPoints can be found in the course modules on Canvas page but it is required that students take notes while in class. Notebook checks will occur if deemed necessary. You can find other supplemental notes and resources also on Canvas.

**Homework:**

Students should review material each night by reading over notes, writing down any questions/gaps in notes and completing any assignments from class. Homework is collected at the ***BEGINNING of EACH*** ***CLASS*.** Homework turned in after that point will be graded as *LATE WORK*. Homework problems must be completed showing complete work/steps along with 2-3 sentences of valid reasoning. Both parts must be completed to receive credit.

**Retesting Policy:**

Students must fulfill specified requirements in order to retest. Students ***must retake the test within a week (7 days)*** of the original graded assessment being returned. Additional time for unusual circumstances will be considered. Students are limited to ***one retest per quarter.***

**Class Requirements:**

This class is designed to challenge students interested in chemistry. All students will be expected to show a deeper understanding of content knowledge.

**TOK and NOS:**

This class will allow students to draw conclusions between the theory of knowledge and the nature of science. Prompts will be given to students to help them connect how chemistry is utilized and applicable in the real world.

**Labs:**

Students will participate in lab activities throughout this course. Labs will come in various forms such as but not limited to practical, simulations, design labs, etc. Students are to behave in a professional manner at all times while participating in labs. No food, drink, or cell phone allowed in the lab area. Students will be required to maintain lab notebooks and complete lab reports.

**Methodology:**

A combination of lecture, class discussion, presentations, videos, cooperative learning, and problem-based learning will be used in this course. Grades will be determined by the satisfactory and timely completion of assignments. The grade of each assignment is based on the prerequisite given for each assignment. Below is an overview of topic/units and major assessments/assignments for this course. Please note all assignments listed with dates/timeframes are subject to change and are an estimate.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Week** | **Topic(s)** | **Projects** |
| Quarter 1 |  | Chapter 1: Stoichiometry |  |
|  | Chapter 1: Stoichiometry |  |
|  | Chapter 1: Stoichiometry |  |
|  | Chapter 2: Atomic Structure |  |
|  | Chapter 2: Atomic Structure |  |
|  | Chapter 3: Periodicity |  |
|  | Chapter 3: Periodicity / Chapter 4: Chemical Bonding and Structure |  |
|  | Chapter 4: Chemical Bonding and Structure |  |
|  | Chapter 4: Chemical Bonding and Structure |  |
| Quarter 2 |  | Chapter 4: Chemical Bonding and Structure | IA Topics |
|  | Chapter 4: Chemical Bonding and Structure | IA Materials |
|  | Chapter 5: Energetics and Thermochemistry | Methodology |
|  | Chapter 5: Energetics and Thermochemistry |  |
|  | Chapter 5: Energetics and Thermochemistry | IA Lab Practice |
|  | Chapter 5: Energetics and Thermochemistry | Lab Time |
|  | Chapter 6: Chemical Kinetics |  |
|  | Chapter 6: Chemical Kinetics |  |
|  | Chapter 6: Chemical Kinetics |  |
|  | FINALS |  |
| Quarter 3 |  | Chapter 7: Equilibrium |  |
|  | Chapter 7: Equilibrium |  |
|  | Chapter 8: Acids and Bases |  |
|  | Chapter 8: Acids and Bases |  |
|  | Chapter 8: Acids and Bases |  |
|  | Chapter 8: Acids and Bases |  |
|  | Chapter 9: Redox Processes |  |
|  | Chapter 9: Redox Processes |  |
|  | Chapter 9: Redox Processes |  |
| Quarter 4 |  | Chapter 10: Organic Chemistry |  |
|  | Chapter 10: Organic Chemistry |  |
| March  21-25 | Chapter 10: Organic Chemistry | \*IA Due  (Only for Seniors) |
|  | Option D: Medicinal Chemistry |  |
|  | Option D: Medicinal Chemistry |  |
|  | Chapter 11: Measurement and Data Processing and Analysis |  |
|  | Chapter 11: Measurement and Data Processing and Analysis |  |
|  | IB Chemistry Test |  |
|  | **FINALS** |  |

**HL Assessments**

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **Overall Weighting (%)** | **Approximate weighting of objectives (%)**  **1+2 3** | **Duration (hours)** |
| **Paper 1** | 20 | 10 10 | 1 |
| **Paper 2** | 36 | 20 18 | 21/4 |
| **Paper 3** | 24 | 10 12 | 11/4 |
| **Internal Assessment** | 20 | **Covers objectives 1, 2, 3, and 4\*** | 10\* |

**Class Policies:**

**1. Always be respectful**

* Be respectful of yourself, your teacher, your peers, and property
* Be respectful by raising your hand to ask a question
* Be respectful by keeping noise to a minimum and not speaking when others are speaking

**2. Be accountable**

* Be accountable for your attitude. Come in with positivity!
* Be accountable for your work
* Be accountable for your actions

**3. Be prepared for learning**

* This is your time to ask for paper and pencil
* Start on work posted on the board
* Turn in homework to appropriate bin

**4. Participate**

* Ask questions
* Be engaged in your learning!
* **NO cell phone should be out during lecture time**
* **NO eating or drinking in the lab area**

**Consequences:**

1. Verbal Warning

2. 1:1 Conversation/TOK Writing Prompt

3. Behavior Accountability Sheet/Parent Contact

4. Referral

5. Removal from class

**Please sign, date, and return this page to your teacher.**

I have read the class syllabus for Mr. Darko’s Chemistry class and I am aware of my duties and responsibilities to being successful this school year, as well as my teacher’s expectation of me. I will adhere to the Honor Policy as outlined in the IB Programme.

**Student Name** (PRINT):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student Email**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Best Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*(Mother or guardian) (Preferably cell phone)*

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Best Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*(Father or guardian) (Preferably cell phone)*

**Parent/Guardian Email**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Parent/Guardian Signature**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student Signature**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*\*P.S. Please return this portion no later than* ***August 27, 2021.*** *Thank you!*