



## Syllabus – High School Chemistry 1 & 2 (2023-24)

### Instructor Contact Info

**Name:** Kristin Marais (B.S. Biochemistry, M.S. in Teaching, Washington State Professional Teaching Certificate with endorsements in biology, chemistry, and general science)

#### Best way for parents/guardians to reach me:

**Email:** [kmarais@discovery.org](mailto:kmarais@discovery.org)

*\*Using this email ensures parent/guardian emails are kept separate from student emails about the class, assignments, grading, etc.*

**Call:** (number will be provided later)

#### Best way for students to reach me:

**Email:** through your Canvas inbox

*\*Using this email ensures student emails are kept within our online “Canvas” classroom email.*

**Call:** (number will be provided later)

### General Course Info

#### Basic Course Structure:

Discovery Institute Academy's high school chemistry course is a two-semester, virtual, synchronous, and lab-based course which integrates the fundamentals of chemistry with intelligent design concepts and topics where applicable. As a “virtual” course, students will participate remotely in the course using their own personal computer. As a “synchronous” course, students will typically meet two times a week via scheduled virtual class sessions to connect and engage with their instructor and peers and to progress through each unit of the course together. Outside of these scheduled class virtual sessions, students will work independently as they review assigned content and complete assignments.

This course is best suited for homeschooling students as Discovery Institute Academy is not a credit-granting institution and does not offer courses for academic credit. Please see the “Learning and Assessment” section further below for more information on how this practically relates to evaluating a student’s overall “grade” at the end of the course.

#### Course Overview:

This course will address the concepts of a traditional high school chemistry course, preparing students for a future high school AP chemistry course or college/university general chemistry course. The course will tie in intelligent design (ID) concepts where applicable.

In the first semester course, students will become proficient in the process of science, matter and atomic structure, electronic structure, chemical bonding, chemical reactions, and stoichiometry. In the second semester course, students will go deeper into chemistry topics by studying the states of matter, properties of solids, liquids, and solutions, behavior of gases, thermochemistry, kinetics, equilibrium, spontaneity, acids and bases, and nuclear chemistry.

At various points, students will develop the skills of scientific inquiry through posing questions, formulating hypotheses, designing and/or conducting experiments, collecting and analyzing data, drawing conclusions, and communicating their findings. Students will learn through a variety of mediums including videos, handouts, assigned readings, discussion boards, Labster virtual simulations, wet-labs, activities, projects, and quizzes/assignments. DiscoveryU will be the portal for reviewing content (e.g., articles, instructional pages, handouts, videos, etc.) including access to select Discovery Institute books, articles, and multimedia embedded into the course. Canvas will be the portal for submitting assignments, reviewing assignment scores / feedback, checking overall grades, and emailing the instructor.

**Suggested Prerequisite(s):**

General / Physical Science  
Algebra 1

*Please Note: It is recommended but not required that students have taken a general / physical science course with some introduction to chemistry. However, it is strongly recommended that students have taken one year of Algebra as some chemistry units will require students to set up and solve algebraic equations or use/interpret graphs. Questions? Concerns? Email me!*

**Suggested Grade Level for Student:**

11th grade

*Please Note: Grade level is not a requirement. The grade level is only suggested as most students will have completed the prior suggested prerequisites by grade 11. Questions? Concerns? Email me!*

**Course Length:**

~18 academic weeks per each one-semester course or 36 academic weeks for the full, two-semester course

**Suggested Course Time:**

~2.5 hours per day on class session days (1.5 hour for lecture + ~1 hour for independent work)  
~1.5 hours per day on non-class session days

*Please Note: These estimated course times are just that - an estimate. Course time will vary from student to student and from assignment to assignment (e.g., simulations, labs/activities, projects, or tests may require additional time).*

**Materials and Other Requirements:**Textbook:

Title: Savvas Chemistry (may also be branded Pearson Chemistry)

Authors: Wilbraham, Staley, Matta, & Waterman

Publishing info: Copyright © 2017

ISBN-13: 9781323205907 (if searching for the book, please search by its ISBN, not its title)

New copies can be purchased at Savvas Learning: <https://www.savvas.com/index.cfm?locator=PS31Nr&PMDbSiteId=2781>

Used copies can be found through Direct Textbook: <https://www.directtextbook.com/isbn/9781323205907>

Lab / Activity Materials

All students will need to purchase additional materials related to wet-labs and/or activities. A materials list will be provided closer to the start of the course. Please note that the instructor will likely need to add/delete/modify some materials as the course progresses for best student experience but will make every attempt to inform students and their parents/guardians in a timely manner.

Other Requirements

All students will need to have consistent access to the following reliable/working items:

- High-speed internet / wifi
- Modern desktop / laptop computer with up-to-date OS, web browser, and software programs
- Headphones w/ microphone
- Webcam
- Printer w/ printer paper and ink
- DiscoveryU Account - Discovery Institute Academy will create the student's account upon registration.
- Canvas Account (free version) - During orientation week, the instructor will invite the student to their Canvas course via an email invitation with accompanying instructions.
- Labster Account - Further into the course, the instructor will enroll the student in Labster and notify the student via email.

Highly Recommended (but not required):

- External Monitor (Having two screens to work with during class sessions or independent work is invaluable!)

- Drawing Tablet (I use a "[Wacom One](#)" tablet which can write / draw / work out problems JUST like pen/paper.)

## Learning and Assessment

### Chemistry Standards:

Please see the "*Chemistry Standards*" page in your "*Course Agreement*" for a specific list of chemistry skills/concepts addressed unit-by-unit. Underlying many of these standards are specific concepts and skills. However, for simplicity, the standards represent the overall broad scope of skills/concepts students will be learning.

### An important note about the role of parents/guardians:

This course is best suited for homeschooling students as Discovery Institute Academy is not a credit-granting institution and does not offer courses for academic credit. As such, it is the parent/guardian rather than the instructor that is considered the final authority on student learning. Practically, this means that while the instructor is responsible for all course instruction, assessment, grading, feedback, and formulating of an overall student letter grade at the end of the course, it is the parent/guardian that is considered the final authority on their student's overall learning and can assign an overall "grade" for their student as they see appropriate. The parent/guardian can access the Canvas gradebook for their student through their Canvas parent/guardian observer account to see their student's scores and instructor feedback. Parents/guardians are welcome to use the instructor's final overall grade in that gradebook to inform their own final evaluation of their student's learning. For more information on how the instructor will assess student learning, see the next section below.

### Assessment Types, Weights, Revisions, and Late Work:

Formative Assessments – 0% weight \*All formative assessments will include "FA" in the assessment name.

#### *Purpose:*

Informal assessments

Provide opportunity for a student to explore and practice the skills/concepts of a course standard(s)

Prepare student for summative assessment(s)

Ensure student understands course expectations and systems

Provide opportunities for student to reflect on learning

Encourage class participation/collaboration

Provide opportunity for course evaluation

#### *Revision Policy:*

The student will have 3 attempts for each formative assessment with their highest score being their final score.

If a formative assessment is set to 1 submission, the student should email the teacher to open additional submissions.

With each attempt, the student will receive feedback in the form of a score and/or teacher feedback to help the student prepare for summative assessment(s).

Should the student need additional submissions beyond three to understand the material and be ready for a summative assessment(s), the student will email the teacher and together they will make a plan to help the student move forward.

Summative Assessments – 100% weight \*All summative assessments will include "SA" in the assessment name.

#### *Purpose:*

Formal assessments

Provide opportunity for a student to demonstrate they have met/exceeded course standard(s)

#### *Revision Policy:*

The student will have 3 attempts for each summative assessment with their highest score being their final score.

If a summative assessment is set to 1 submission, the student should email the teacher to open additional submissions.

With each attempt, the student will receive feedback in the form of a score and/or teacher feedback to help the student meet/exceed course standard(s) (i.e., earn 80% or above on the summative assessment).

Additional submissions beyond the 1st submission may require the student to complete a specific study plan and/or an alternative or modified summative assessment.

Should the student need additional submissions beyond three to meet/exceed course standard(s), the student will email the teacher to ask if an additional submission is allowed. The teacher may discuss this further with the student and if an additional submission is offered, may require the student to complete a specific study plan and/or an alternative or modified summative assessment.

Late Work Policy (for both formative & summative assessments):

As this is a synchronous course, students will be most successful if they are working on pace within the course because they will come prepared to participate in weekly class sessions, be able to tackle new concepts/skills that build upon prior concepts/skills, and avoid the stress that comes from procrastination. Generally and unless the instructor communicates otherwise: (1) assessments assigned between Monday-Thursday for a given week are due by week's end on Sunday @ 9:30 am PST and (2) assessments assigned Friday for a given week are due the following week Monday @ 9:30 am PST.

Given that formative assessments are not weighted, students can technically choose to do all or some formative assessments as they see the need for practice/learning. Within those formative assessments they choose to do, students can do all or some of the problems. However, in my experience, most chemistry students need to at least attempt all formative assessments and more often than not, complete all the problems within that formative assessment to feel fully confident for summative assessments. Given that summative assessments are weighted, students need to complete each summative assessment for the course. If a student is unable to complete an assessment (either formative or summative) by the due date on account of illness, emergency, or other extenuating circumstance, the parent/guardian should email the instructor directly to explain the circumstance and request an extension.

**Grading Methods:**

All summative assessments will be graded according to a corresponding rubric or teacher directions. Only summative assessment scores will be calculated towards a student's final grade. Each semester will receive a separate grade.

**Grading Scale:**

A = 90% - 100%  
 B = < 90% - 80%  
 C = < 80% - 70%  
 D = < 70% - 60%  
 F = < 60%

**Instructor Expectations (i.e., what you can expect of your instructor)**

**Instructor's Weekly Schedule:**

Day	Schedule	What will I be doing?
Monday	10:00 am - 2:30 pm PST (prep day)	Making/Returning calls and emails, grading, lesson prep
Tuesday & Thursday	10:00 am - 11:30 am PST (class)	Facilitating Class Sessions
	11:30 am - 11:45 PST (break)	"Breaking" 😊
	11:45 am - 12:45 pm PST (*drop-in)	Helping students w/ questions etc. Also see *note below this table.
	12:45 pm – 1:00 pm PST (lunch)	"Lunching" 😊

	1:00 pm - 2:30 pm PST (*1:1s)	Meeting w/ students who have scheduled one-on-ones
Wednesday	10:00 am - 2:30 pm PST (prep day)	Making / Returning calls and emails, grading, lesson prep
Friday	Not available.	

Saturday / Sunday / Holidays - Not available.

\*Note that drop-in hours and 1:1s are optional for students to participate in but highly recommended. Sometimes, and at the instructor's discretion, a weekly drop-in session(s) may be used to provide direct instruction/review for a chemistry topic(s) if a class session(s) that week was used for an ID-related topic. However, these drop-in sessions remain optional but highly recommended.

#### Instructor Turnaround Time Estimates:

Responding to Phone Call	1 school day
Responding to Email	1 school day
Grading Submitted Work	3 school days <i>*This estimated time can be lengthened for certain grading-intensive assignments/labs/projects or during busy seasons such as the semester end.</i>

#### Instructor Weekly Email:

Each Friday, the instructor will email parents/guardians and students via Canvas. This email will include information about course topics, assessments, deadlines, and other announcements for the following week.

#### Progress Reports:

The instructor will email parents/guardians and students with individual progress reports at roughly the halfway point of each semester course.

#### Instructor Teaching Approach:

The instructor will:

- Be knowledgeable in their subject area and always willing to learn more.
- Be enthusiastic about what they are teaching!
- Be approachable, patient, compassionate, and encouraging with students.
- Welcome questions and new ideas!
- Facilitate critical thinking.
- View learning as a process that takes practice, invites revisions, and leads to growth.
- Provide detailed feedback to help students assess their understanding and make revisions as needed.

#### Instructor Professional Discretion:

The instructor reserves the right to make adjustments to the course structure, content, pacing, and expectations as needed. Parents/guardians and students will be notified via email of any significant changes made after the course has started.