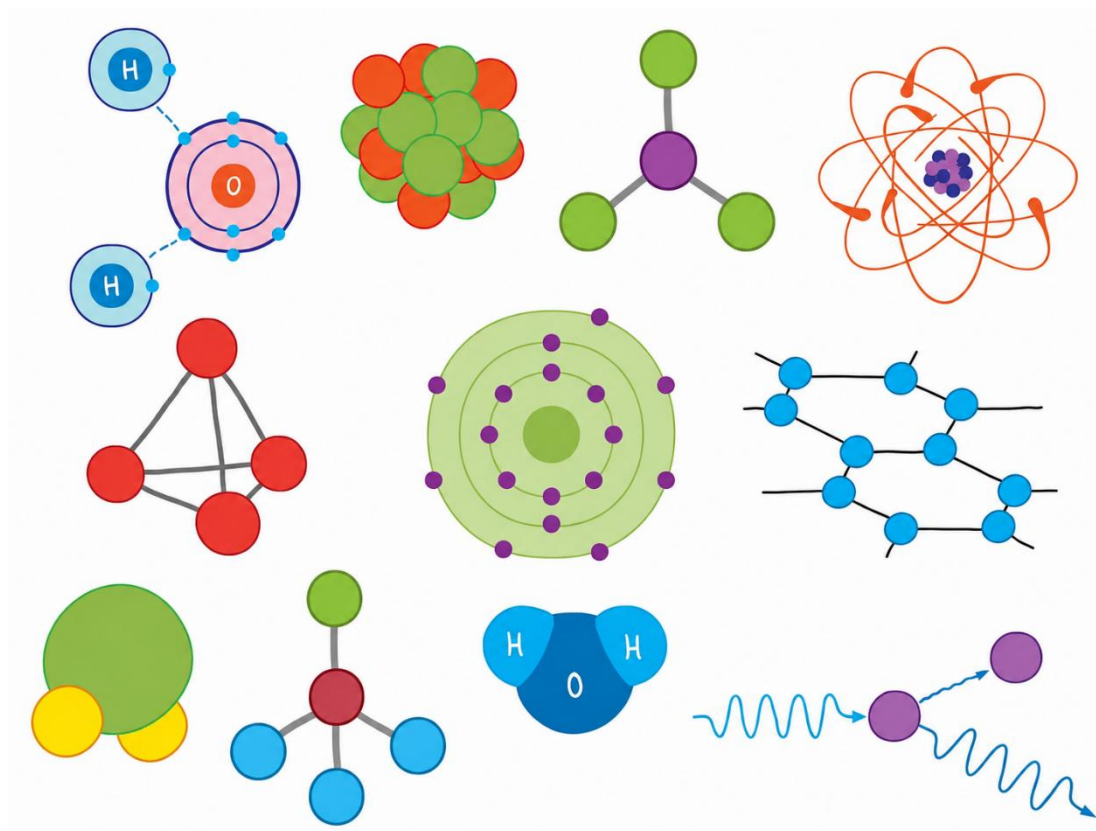


Welcome to General Chemistry, CHEM 103!



Dr. Eugenia Vasileiadou (Vasil-ee-adu)

Fall 2026

Introductions

- Instructor: Dr. Eugenia Vasileiadou
 - Office: Park 288
 - Office Hours: Tuesdays and Thursday 9:15 AM-10:15AM
- Course TA: Ramona Shekhar



New Materials Discovery for a Sustainable Energy, Environment and Health:
• Chemical Synthesis • Characterization • Devices



Introductions

Office Hours in Park 288:

- Tuesdays and Thursday 9:15 AM-10:15AM
- By appointment (email me)
- Email me with questions!

TA Hours: TBD

Q-center:

<https://www.brynmawr.edu/inside/offices-services/q-center/q-center-schedule>

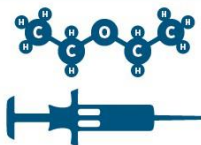
Introductions

Get-to-know-you Survey

WHAT'S CHEMISTRY EVER DONE FOR US?

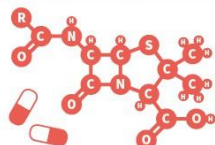
Science plays a vital role in our health, safety, economies, and governments. Here are just some of the ways chemistry impacts your everyday life.

ANAESTHETICS



We take surgery under anaesthesia for granted today, but the first anaesthetics were only discovered in the mid-1800s. Subsequently chemists have made many more.

ANTIBIOTICS



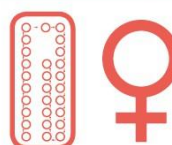
Bacterial infections were a common cause of death until antibiotics became available in the 1930s. Chemists have since discovered numerous classes of antibiotics.

BATTERIES



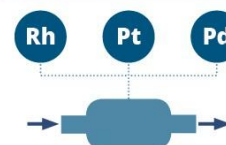
Both alkaline batteries and the lithium batteries in your phone were developed by chemists, and they're still working on making improvements to them.

BIRTH CONTROL



The first oral contraceptives became available in the 1960s after chemists developed synthetic compounds that could affect hormone levels in the body.

CATALYTIC CONVERTERS



Catalytic converters, developed in the 1960s and 70s, convert toxic gases and pollutants in car exhaust gas into less harmful emissions, helping to reduce pollution.

FERTILISERS



The Haber process, developed in the early 1900s, creates 450 million tons of nitrogen fertiliser per year. This is vital for growing food and supporting the world's population.

FUELS



Petrol and diesel extracted from crude oil currently fuel the majority of our cars. Chemists are also investigating cleaner alternatives, such as hydrogen fuels.

PLASTICS



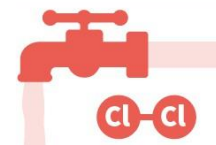
Plastics are everywhere in our day-to-day lives. Over the years chemists have developed a range of plastics for different uses, including clothing and food packaging.

SCREENS



If you're reading this on a screen, you have chemists to thank. Different types of screens and touch screens all rely on materials developed by chemists to work.

WATER TREATMENT



Water chlorination began in the early 1900s and kills bacteria and microbes, helping prevent the spread of diseases such as cholera. It also keeps swimming pools clear!



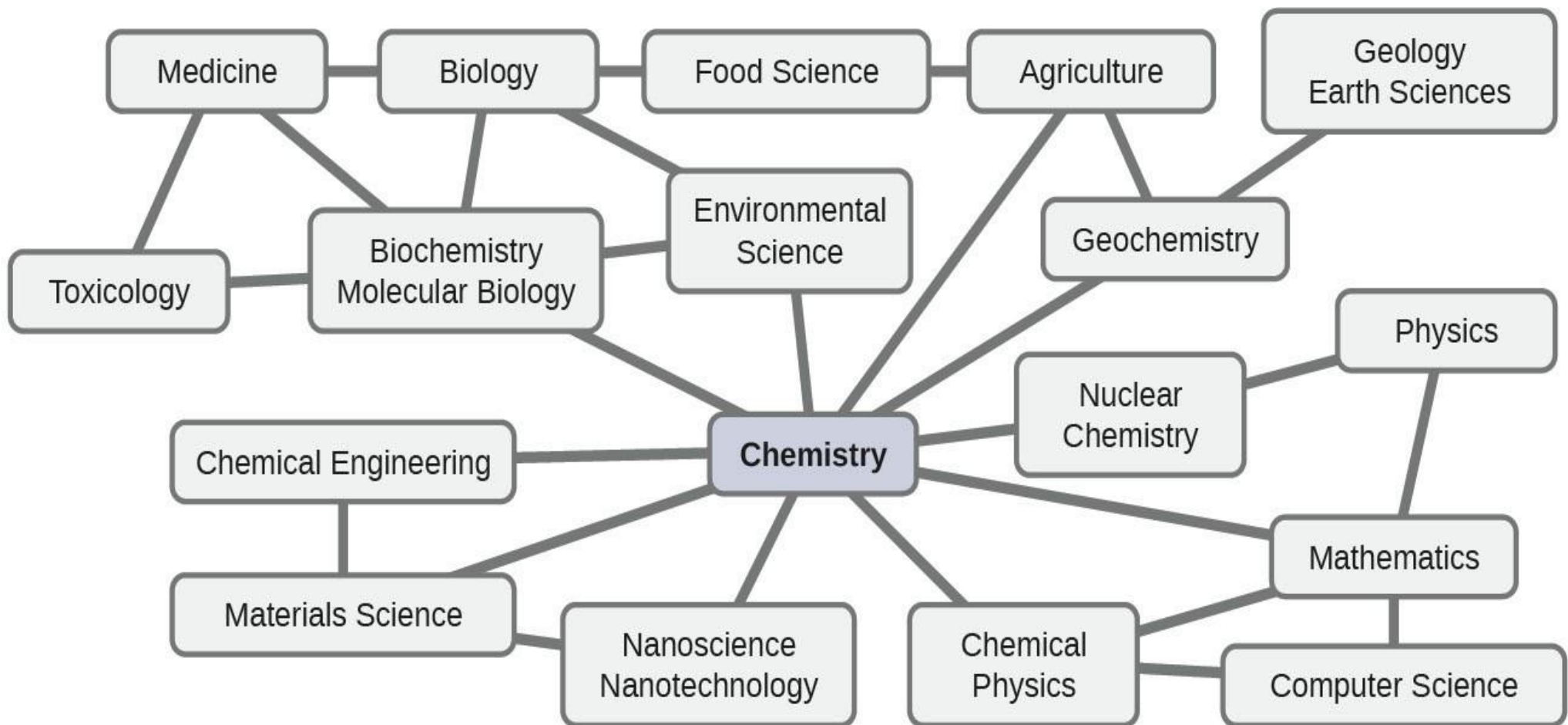
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Warm-up: Chemistry a central science!

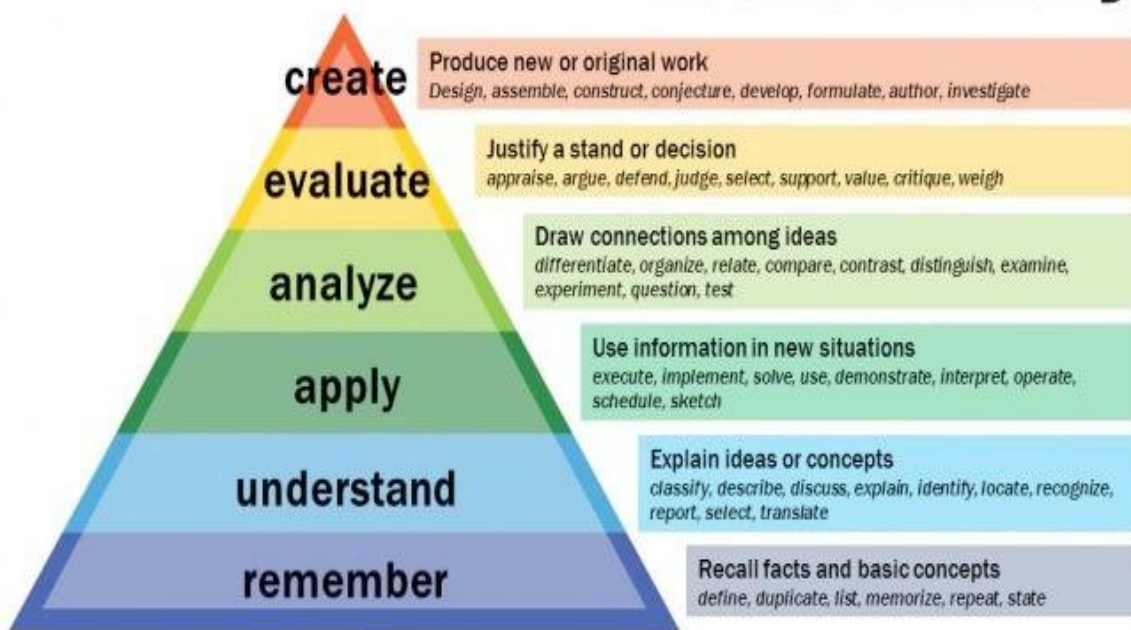
What is Chemistry? The science that seeks to understand **what matter does** by studying **what atoms and molecules do**.

Matter is anything that has mass and takes up volume.



General chemistry is a “puzzle”

Bloom's Taxonomy



Chemistry 103 overarching learning goals

- To achieve **solid understanding of basic general chemistry concepts** and be able to apply them to **solve problems**
- To develop **critical, analytical and decision-making skills**
- To develop appreciation for **how chemistry enables us to better understand the world** that surrounds us and **make informed decisions** in the countless facets of our lives that involve interaction with matter.



Anna Levant Hayden
(1927-1967)

FDA, exposed Krebiozen, a
controversial substance
marketed as an anti-cancer drug

Tips for CHEM 103

- Come to class and be prepared.
Read the assigned text sections before class.
Lectures will not be recorded.
- Be active in class.
Ask questions!
- Work through every assigned homework problem.
You should work the Achieve problems by hand, as you would on a quiz or exam, and enter the final answer on Achieve. Show your work (even though it won't be submitted).
- Use all the resources at your disposal.
Office hours, TA's, textbook, email/talk to me!
- Study with others.
- **Practice consistently & effectively.**
"Retrieval Practice" versus re-reading/reviewing
Work problems! End-of-chapter problems are good extra practice.
- Growth mindset

Syllabus overview: course materials

- OpenStax textbook
 - Free online textbook
 - Hard copies can be ordered
- Scientific calculator
- Achieve homework
 - Enrollment in our Achieve course should be available by Wednesday; financial aid available
 - 10 chapters; each has an Achieve problem set
- Course Moodle website
 - Separate from lab Moodle website!



Syllabus overview: course logistics

- Lecture
- Recitation and worksheets
 - We will work on them on non-exam Fridays during the recitation period.
 - Due at the end of recitation period.
- Exams
 - 3 non-cumulative midterm exams
 - Cumulative final exam



Syllabus overview: course assessment

Graded component	Percentage (%)
Course Assignments (Homework and Recitation Worksheet)	9% (Homework = 4.5% and recitation worksheets = 4.5%)
Attendance and Participation	2%
Midterm Exam (3 total)	36% (12% per midterm exam)
Final Exam	20%