



STARK STATE COLLEGE

GENERAL SYLLABUS

Course Information

Course Name: Exploring Science and Technology
Course Number: CHM100

Required Materials

Textbook(s): Chemistry in Context 10th Edition, American Chemical Society, McGraw Hill, ISBN 13: Inclusive Access E-book 9781260960440.

Lab Manual and Lab kit: CHM100 Lab Manual and the lab kit are only available at SSC Bookstore.

Required Readings: Students are required to use digital library resources or open access databases to access peer-reviewed scientific journal articles related to their project topics or lab assignments.

Additional Materials: Household experiment supplies, Printer or access to a printer, CamScanner or Scan Genius app., Scientific Calculator, Lab Notebook

Course Outline/Calendar

The date of coverage and order of coverage may be modified based on the faculty member and events beyond the control of faculty members that interfere with class times and teaching.

16-Week Calendar

Week	Chapter/Topic
1	Introduction Chapter 1 –Portable Electronics (Sections 1.7-1.10 are excluded)
2	Chapter 2 -The Air We Breathe
3	Chapter 2 -The Air We Breathe
4	EXAM 1 (Chapters 1 and 2)
5	Chapter 3 – Radiation from the Sun (Sections 3.8-3.12 are excluded)
6	Chapter 4 – Climate Change
7	EXAM 2 (Chapters 3 and 4)
8	Chapter 5 – Water Everywhere
9	Chapter 6 – Energy from Combustion (Sections from 6.5 to 6.17 are excluded)
10	EXAM 3 (Chapters 5 and 6)
11	Chapter 9 – The World of Polymers and Plastics
12	Chapter 10 – Brewing and Chewing
13	EXAM 4 (Chapters 9 and 10)
14	Chapter 11 – Nutrition
15	Chapter 13 – Genes and Life
16	Final Exam (All chapter included)

CHM100 Tentative Schedule (8-week)

Week	Content
1	Introduction Chapter 1 –Portable Electronics (Sections 1.7-1.10 are excluded)
2	Chapter 2 -The Air We Breathe
3	EXAM 1 (Chapters 1 and 2)
3	Chapter 3 – Radiation from the Sun (Sections 3.8-3.12 are excluded) Chapter 4 – Climate Change
4	EXAM 2 (Chapters 3 and 4)
4	Chapter 5 – Water Everywhere
5	Chapter 6 – Energy from Combustion (Sections from 6.5 to 6.17 are excluded)
5	EXAM 3 (Chapters 5 and 6)
6	Chapter 9 – The World of Polymers and Plastics
6	Chapter 10 – Brewing and Chewing
7	EXAM 4 (Chapters 9 and 10)
7	Chapter 11 – Nutrition
8	Chapter 13 – Genes and Life
8	Final Exam – All chapters included!

CHM100 Labs:

Experiment	Due FRIDAY, 11:59 PM
Experiment 0: GETTING STARTED AND SAFETY	Safety Contract; Safety Quiz Inventory Check (All required)
Experiment 1: THE SCIENTIFIC METHOD AND DATA ANALYSIS	Exp. 1 Lab Report
Experiment 2: LABORATORY METHODS	Exp. 2 Lab Report
Experiment 3: MOLECULES OF LIFE	Exp. 3 Lab Report
Experiment 4: GREENHOUSE GASES	Exp. 4 Lab Report
Experiment 5: HOT PACK THERAPY	Exp. 5 Lab Report
Experiment 6: HOUSEHOLD CHEMICALS	Exp. 6 Lab Report
Experiment 7: WATER ANALYSIS: What is in your water? Project Topic and Project Summary	Exp. 7 Lab Report Project topic and summary are due Sunday.
Experiment 8: CHROMATOGRAPHY	Exp. 8 Lab Report
Experiment 9: POLYMERS and HEALTH	Exp. 9 Lab Report
Experiment 10: EXTRACTION OF DNA	Exp. 10 Lab Report
Experiment 11: FABRIC DYEING	Exp. 11 Lab Report
Make-up Lab: Experiment 12: SOIL SCIENCE	Exp. 12 Lab Report
Project Presentation and Q & A	

No Lab (Final Exam week) Finals week. Late reports and Project submissions are NOT accepted this week.	
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Note: In CHM100 labs, students will use interactive phet simulations, such as https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html

Interactive data will also be gathered from the following resources:

<https://climate.nasa.gov/>; <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

<https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/>

The Environmental Protection Agency standards to learn the maximum contaminant levels for certain substances. Students test their drinking water using testing strips: <http://water.epa.gov/drink/contaminants/index.cfm#one>