

ANNE ARUNDEL COMMUNITY COLLEGE

CHE 112-875 Syllabus for General Chemistry 2

Fall 2017

Professor Maureen A. Sherer

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Office Hours: see Professor's Webpage or Canvas

Professor's Webpage: <http://ola4.aacc.edu/masherer>

This online course uses the Canvas Learning Management System. Log into Canvas through myaacc:

<http://myaacc.aacc.edu>

TEXTS & Supplies:	1) Brown, LeMay, Bursten, Murphy, Woodward, & Stoltzfus, <u>Chemistry, the Central Science</u> , 13 th ed., 2015. (Solution Manual available & recommended, but not required.)
	2) <u>AACC CHE 112 Laboratory Manual</u> , 2017-2018.
	3) Scientific Calculator (programmable calculator not allowed for exams)

TENTATIVE SCHEDULE

Week Starting	MODULE (&TEXT REFERENCE)	LABORATORY*
Aug 28	Introduction & Chemical Equilibrium (Chap 15) <i>Class Discussion:</i> ongoing through semester	Intro, Safety, Science Writing, Graphing
Sep 4	Acids & Bases Part I (Chap 16) Quiz: Thursday - Saturday	Equilibrium; Lab Drawer Check-in
Sep 11	Acids & Bases Part II (Chap 17.1 – 17.3)	KHP Assay Parts I&II; Scientific Literature Research; Review Quiz
Sep 18	Acids & Bases Part II, continued Exam 1: Thursday - Saturday	KHP Assay Parts III & IV
Sep 25	Solubility & Precipitation (Chap 17.4 – 17.6) <i>Acid/Base Discussion ends Sunday 10/1</i>	Analyses of Titration Curves
Oct 2	Complex Ions (Chap 17.5, 17.7, Chap 23)	Qualitative Analysis: Group I
Oct 9	Thermodynamics (Chap 19)	QA: Group IV & V
Oct 16	Thermodynamics, continued Exam 2: Thursday – Saturday	Green Chemistry, QA Worksheet & Midterm Quiz
Oct 23	Electrochemistry (Chap 20) <i>Thermodynamics Discussion ends Sunday 10/29</i>	QA: Anions
Oct 30	Electrochemistry, continued <i>Electrochemistry Discussion ends Sunday 11/5</i>	QA: Salt Unknown
Nov 6	Kinetics (Chap 14) Exam 3: Thursday – Saturday	Faraday
Nov 13	Kinetics, continued <i>Kinetics Discussion ends Sunday 11/19</i>	Kinetics
Nov 20	Organic Chemistry (Chap 23)	No Lab
Nov 27	Nuclear Chemistry	Atomic Absorption Spectroscopy
Dec 4	Environmental Chemistry	Organic Molecular Structure

*Overview only - detailed Lab Syllabus will be given in lab. You must register for an on-campus lab section.

Laboratory starts on the first day listed in the Schedule of classes. Attendance is essential.

Quiz.....Sep 7 – 9; Review** of Key Concepts of CHE 111.

Exam I.....Sep 21 - 23; Equilibrium, and Acids & Bases Part I

Exam II.....Oct 19 - 21; covers Acids & Bases Part II, Solubility & Precip, and Complex Ions

Exam III.....Nov 9 - 11; covers Thermodynamics and Electrochemistry

Final Exam.....Dec 11 - 12; comprehensive

**Student must independently review first semester general chemistry concepts, especially solution stoichiometry, electrolytes in solution, writing net ionic reactions, and nomenclature (Chapters 4 & 2) in order to be successful in this course.

CHE 112 is generally the appropriate course for science & engineering majors.

CHE 113 is generally the appropriate course for students in Allied Health Fields. If you are unsure about the suitability of this course for you, see the instructor and an academic advisor immediately.

GRADING	Traditional Option	Service Learning Option (see page)
Three Exams @ 100 points	300	300
Quiz (review of key CHE 111 content)	50	50
4 Discussions @ 5 points	20	20
3 Graded Homework Sets @ 10 points	30	30
Service Learning	N/A	30
Laboratory	200	200
Final Exam (comprehensive)	200	200
TOTAL	800 points	830 points

Both lecture and laboratory must be passed (with 60% or greater) in order to pass this course.

A student with 90% of the points (720 or more, traditional option) earns an “A”. To earn a “B” requires at least 80% (640 to 719, traditional option), 70% for a “C”, and 60% for a “D”. Less than 60 % is a failing grade. It is also required that a student must pass the laboratory (at least 60%) in order to pass the course.

Exams are administered in the AACC Testing Centers according to the schedule on this syllabus. It is essential to write each exam during the scheduled time. In the event of a missed exam, there will be a cumulative make-up exam given in the Testing Center during the last week of classes. It is the student’s responsibility to contact the instructor about the absence immediately and to request permission to sit for the make-up exam. Documentation of a compelling reason will be required.

Service Learning is an option which you may choose. More information is on a subsequent page.

An Honors Contract is an option for an eligible student. More information is on a subsequent page.

Solving problems is crucial to master new material and develop skill in applying concepts. Exercises (problems) from the end of the chapters are assigned for practice. Answers to odd-numbered exercises are in the back of the text (starting on page A-1), and the *Solutions to Problems Manual* is available. Additional practice problems are available on the professor’s website. Tests are problem solving oriented, and will be similar to these various problems.

Graded Homework:

Students are to hand-in the **detailed** solutions of the “*Additional Practice Problems*” presented in the following modules by the due dates listed. Each problem solution must be neatly shown in a logical order. **Work must be done by the student’s own hand**, not machine formatted. Be sure to use units and significant figures. The assignments should be dropped off at the Science Office in DRGN 226. You can do this when you come for lab. If the office is closed, there is a mailbox drop box outside the door. Be sure your name & my name are on your assignment. Alternatively, homework may be sent by US Mail, or scanned & submitted within Canvas. If you choose to scan, make sure it is readable: sufficiently large with clear, crisp characters. Otherwise it will have to be resubmitted in a readable format. Note the answers to these problems are available by hyperlink within the module. You only need to develop the detailed solution. Of course you may ask the professor questions as you work.

Homework Set	Due Date
Equilibrium	Fri, Sep 8
Acids & Bases Part II	Fri, Oct 6
Solubility & Precipitation	Fri, Oct 13

Ideally, you will finish and hand-in each problem set **well before the due date**. These dates are deadlines. While the “*Additional Practice Problems*” from the later modules will not be collected and graded, you certainly need to do them and ask questions if you are having trouble. Solving problems is an essential part of test preparation.

A general guideline says an average of 2 to 3 hours of study time per week (for a 16 week semester) is necessary for each 1 credit hour. For this online, 8 week course, this translates to an average of 20 to 24 hours per week. This is not including the time spent preparing for lab & writing lab reports, which will require additional time. Some students will need to study more than this. Also, effective study is essential. Please see more information at <http://ola2.aacc.edu/vc/timemanagement/TimeManagementWebShop>

As soon as possible, log into the course in Canvas, click on “Modules” from the left vertical menu bar, then click on “Course Advice” from the “Getting Started” Module and follow the directions.

Additional Learning Resources:

1. Professor’s Office Hours
2. Science Tutoring Center in the basement of the Dragun Science Bldg, Rm 5.
3. *Solutions to Problems Manual* (Bookstore & Library Reserve)
4. **Recommended reference textbook** (Library Reserve): Jespersen, Brady & Hyslop, Chemistry, the Molecular Nature of Matter, (recent edition is the 6th ed., 2012.)
5. Current course textbook is also at the Library Reserve Desk
6. Free peer tutor (upon availability) arranged through Academic Support
7. Online Tutoring (<http://ola.aacc.edu/ostc/>)
8. Computer Lab in DRGN 120 – open schedule posted by door.

Discussions: There are two types.

A) The Class Discussion is ongoing throughout the semester. It provides an opportunity for students to interact with classmates and to enhance understanding of course concepts by informal ‘peer tutoring’. In your **required** posting for the first week, you will introduce yourself to your classmates (further details within the online class). For the following weeks, the posting may either be a comment, question, or reply to another student’s question. This discussion is not graded.

B) Module Discussions: Many modules include a discussion about the content of that module. Students are required to post a thoughtful response to the professor’s assignment, and a thoughtful response to another student’s response. The discussion for a module opens when the module begins (according to the syllabus) and concludes at the closing date posted on the syllabus. Each module discussion is worth 10 points. To participate, click on “Discussions” from the left menu bar, or you may access a Discussion from the module itself.

Discussion postings may have a conversational style, but they should not be sloppy. They need to be grammatically correct and punctuated appropriately. Abbreviations are acceptable only if they are standard abbreviations or otherwise explained. In all our discussions and other interactions in the course, we will express ourselves courteously to everyone.

E-mail correspondence: Use the e-mail function in Canvas (‘Inbox’, upper right corner near ‘Help’) for routine correspondence that does not require me to respond to you using subscripts or superscripts. For questions of this sort, use masherer@aacc.edu. Please include your class section (CHE 112-875) in all email messages..

All written communication must follow the conventional rules of grammar, punctuation, spelling, composition, and etiquette. This includes email messages, discussion postings, essay questions, and lab reports. Communication is one of the AACC Competences addressed by this course.

Practice Quiz Participation: The final activity of each module is a practice quiz. It is scored online and results are immediately reported to the student. You may take these quizzes as many times as you desire. There are no course points associated with this activity. It is simply a diagnostic tool for the student. If you do not understand these questions, you are not ready for the exam. Do ask the professor questions when needed.

Announcements (on class homepage, left Navigation Menu): Please check ‘Announcements’ regularly for current class information, reminders, and such - *at least* twice each week, near the beginning and end of a week.

Withdrawal: In order to receive a “W” for the course, a student must submit the appropriate form at the Records Office by Nov 20. If you stop attending class, but do not formally withdraw with the Records Office, be aware that you will receive a grade based on your earned points out of the course total .

Laboratory Safety & Operational Rules: All CHE 112 students agree to acquaint themselves with the Laboratory Rules and to abide by them. You will receive a laboratory syllabus in your lab section.

Academic Integrity and Civil Discourse: Read the AACC policy on Academic Integrity at <http://www.aacc.edu/policies> and in the *AACC Catalog*. It is understood that students will abide by this and all college policies. The consequences of an academic integrity violation are very serious. A report is filed with the dean's office and the penalty is substantial: It may include failure for the course or suspension, depending on the gravity of the violation.

Impolite behavior will not be tolerated in this course.

Cell phones and all electronic communication devices must be silent & not used during all exam and lab times unless directed by the professor. During exams these devices must be turned off and in a backpack, purse or closed tote bag.

Attendance Reporting: AACC requires that professors report whether or not each student has participated in the online class on a weekly basis.

AACC Catalog Description for CHE 112, General Chemistry 2

4 credit hours – Three hours of lecture and three hours of laboratory weekly; one term.

Examine kinetics; gaseous and aqueous equilibria – including acids, base, solubility and complex ion; thermodynamics; electrochemistry; and nuclear chemistry. Study introductory organic chemistry and consider aspects of environmental chemistry. Laboratory work includes qualitative analysis and quantitative measurements. Lab fee \$40.

Prerequisite: CHE 111 with a grade of C or better and either MAT 141 (formerly MAT 131) with a grade of C or better or eligibility for MAT 151.

Learning Outcomes: This is a General Education Science Course with Laboratory. The particular College-wide Core Competencies which are emphasized in this course are 1) Scientific Reasoning, 2) Quantitative Reasoning, 3) Innovative and Critical Thinking 4) Communication, 5) Information Literacy, and 6) Technology Fluency. Please read accompanying information on the class webpage about College-wide Competencies, CHE 112 Expected Learning Outcomes, and Homework. (<http://ola4.aacc.edu/masherer/>, then click CHE 112 Class Page.)

Closure of the college for any reason: When the college reopens, CHE 112 Lab will meet regardless of the remaining amount of class time.

Science Office Address and Phone Number:

Anne Arundel Community College
101 College Pky.
Dragun Science Building, Room 226
Arnold, MD 21012

410-777-2260

Disability Support Services Statement: The Disability Support Services Office (DSS) provides equal access to educational opportunities for qualified students with disabilities. Students interested in course accommodations must provide relevant documentation in order to receive accommodations. For information, please call Courtney Sales, Program Manager for DSS, at 410.777.2306, email her at cjsales@aacc.edu or visit <http://www.aacc.edu/resources/disability-support-services> . Deaf and hard of hearing students can reach the office by calling Maryland Relay 711 or by emailing dss@aacc.edu.

Canvas ADA Statement: Canvas provides a user experience that is easy, simple, and intuitive. Special attention has been paid to making Canvas screen-readable. The Rich Content Editor encourages users to create universally accessible content. Canvas is designed to allow limited customization of colors and schemes to be accessible for all users. The National Federation of the Blind granted Canvas the Gold Level Web Certification in 2010. Find more information here: <http://www.instructure.com/accessibility>

Notice of Nondiscrimination: AACC is an equal opportunity, affirmative action, Title IX, ADA Title 504 compliant institution. Call Disability Support Services, 410-777-2306 or Maryland Relay 711, 72 hours in advance to request most accommodations. Requests for sign language interpreters, alternative format books or assistive technology require 30 days' notice. For information on AACC's compliance and complaints concerning sexual assault, sexual misconduct, discrimination or harassment, contact Suzanne Boyer, federal compliance officer at 410-777-1239 or complianceofficer@aacc.edu or Felicia Patterson, Title IX coordinator at 410-777-2256, or Maryland Relay 711.

Student Conduct Policy: Students shall at all times conduct themselves in a manner that demonstrates mutual respect and courtesy, displays appropriate standards of behavior, and refrains from any actions or inactions that impinge on the rights of others or disrupt the teaching and/or learning process or the operations of the college. A student found in violation of this policy or any other College policy shall be subject to appropriate sanctions in accordance with the student conduct procedures. The full text of the policy is available on the AACC website (<http://www.aacc.edu/policies>) and in the Student Handbook and College catalog.

Acceptable Use of Information Technology Resources: This policy governs the acceptable use of the college information resources by anyone. This policy applies to students enrolled in this course at any time they are using college resources. The goal of the usage policy is to encourage an environment of learning in which all students can interact in an open, legal, and ethical manner. The full text of the policy is available on the AACC website (<http://www.aacc.edu/policies>) and in the Student Handbook and College catalog.

Emergency Class Cancellation: If an emergency arises in which the college is closed, the planned activity for that day or assignment will occur or be due the next day that classes resume on campus. Students can also check www.aacc.edu. You can sign up for text messaging to your cell phone using the following website: <http://www.aacc.edu/campusalerts> .

ACA 100-020 Student Success for Science Students is a support class that has shown to increase student grades in the past. It does not start until a few weeks into the semester and only meets once per week. This one credit class can help you improve your learning/study skills. This section is taught by science faculty and is targeted to specific study skills needed in science. It does not re-teach your science class, it helps you to become a better student.

Service Learning for CHE 112 Students

Service Learning is an opportunity for students to enhance their classroom learning by working on relevant projects which serve the community. For the student, service learning is engaged learning: It is active, applied, and connected to the good of the community. The community benefits not only from the students' work, but also by fostering civic involvement and developing future leaders.

The Commitment.

During the semester the student works for an approved agency/organization for 10 to 20 hours. The agency designates a supervisor who introduces the student to the project and provides guidance as needed. The student works in a responsible, professional manner, and she/he also maintains a log of hours worked. The supervisor is asked to verify this and to provide a short written evaluation at the end of the service. Additionally, the student writes a reflective paper according to the criteria set by the professor. In this paper the student integrates his/her service learning with course concepts. The service learning component of a course is one of a number of its assessments, among the other assessments are the more traditional exams, homework, lab work, and such.

Nature of the Service Projects.

Probably most projects in which students would participate are ongoing and lend themselves to multiple workers over time. Projects might involve such tasks as data validation, routine data analysis, internet research, lab testing, monitoring in the field, or site remediation.

Establishing the Contract for Participation.

All arrangements for service learning are coordinated through the Center for Learning through Service at AACC. Briefly, the prospective student will review the list of opportunities, consult with the professor, and call the agency to request an interview for an assignment. If accepted, there is a form (The Service Learning Contract) which must be signed by the student, the site supervisor, and the professor. ***The deadline for submitting this contract and the liability waiver is October 3, 2017.***

There is much more information on the program's website:

<http://www.aacc.edu/campus-life/serve-your-community>

In particular, *Student Handbook with Community Partners* document is available from the above site. It includes descriptions of the Community Partners and their contact information.

The phone number for the Director for Learning through Service is 410-777-2366.

Possible Projects for CHE 112 for the Fall, 2017 Semester.

There are only a limited number of projects available, so the sooner a student speaks to the professor and gets started in the process, the more likely she/he will be able to participate. Please consult the Service Learning Student Handbook to preview possible opportunities with one of the Community Partners listed in the Handbook. For examples: Arlington Echo Outdoor Education Center, Chesapeake Bay Environmental Center, Chesapeake Bay Foundation, Chesapeake Children's Museum, Jug Bay Wetlands Sanctuary, or Real Food Farm.

Service Learning Fair with Community Partners: Meet Community Partners & complete your service learning contract at the fair. ***Tuesday, September 19, 10 AM – 2 PM***, Quad (If Rain: SUN Dining Hall)

Completed Hours Log and Evaluation Form due Nov 28, 2017.

Reflective Paper / Journal due Dec 1, 2017.

In this paper, the student relates his/her project to chemistry concepts. For example, if the project is developing a streamside buffer of vegetation, describe how this affects the water chemistry of the stream. The student will follow the guidelines given by the professor for this paper.

Honors Contract for CHE 112 Criteria and Requirements

An interested, eligible student must:

1. Provide the professor with evidence of eligibility: From your myaacc page, under Personal Profile, click Honors Eligibility. If you are eligible, there will be an option to print out a form (pdf) stating your eligibility. Print this and bring it to the professor within the first week.
2. Set-up an appointment with the professor to discuss your honors study project within the first week.
3. In consultation with the professor, complete and submit the honors contract application to the honors committee via email (honors@aacc.edu) before the end of the first week of classes.
4. Complete the regular coursework of CHE 112 (including laboratory, and, if chosen, service learning) and complete the honors study project delineated on the honors contract.
5. Understand the following:
 - Once the contract is approved by the honors committee, a student cannot revert back to the non-honors option after the end of the first month (for the exact date see <http://www.aacc.edu/about/administrative-offices/honors-program>).
 - If the student does not complete the honors study project, the highest grade the student could earn is a 'C'.
 - In order to receive honors credit, a student must earn an A or B in the course.
 - In order to maintain eligibility in the Honors Program, a student must maintain a 3.4 overall GPA in honors courses.
6. The Honors Program website is <http://www.aacc.edu/about/administrative-offices/honors-program>.