

**GENERAL CHEMISTRY II, CHEM 2100, LECTURE – FALL 2020
FULLY ON-LINE (BLACKBOARD & ZOOM)**

LECTURE INSTRUCTOR CONTACT INFORMATION, CLASS AND OFFICE HOURS

Professor Maggie Ciszowska
malgcisz@brooklyn.cuny.edu

Interactive Synchronous class meetings: Tuesdays, 11:00 AM – 12:30 PM

Zoom sessions, details posted on Blackboard in Course Documents, sessions will be announced on Blackboard

Office Hours: Wednesday, 11:00 AM – 12:00 PM or by appointment (you can make it via e-mail)

Zoom (details will be posted/announced on Blackboard)

ALL LECTURE materials are available on BLACKBOARD - CHEM 2100 Fall 2020 Merged Lecture

See page 2 for recitation and lab information

REQUIRED TEXTS:

- **Chemistry 2e, P. Flowers, OpenStax, 2019**

This text is available as a free PDF at <https://openstax.org/details/books/chemistry>

It is also available free for Kindle at <http://www.amazon.com>

You can order a hard copy through <https://brooklyn.textbookx.com/adm/> or from <http://www.amazon.com> – but you can always print chapters from the PDF.

- **Experiments in General Chemistry, M. N. Kobra, Ed., Fourth or Third edition. Kendall/Hunt, Dubuque, IA, 2017 (2012).**

REQUIRED ITEMS

- Scientific calculator

LEARNING OBJECTIVES FOR CHEMISTRY 2100

Learning Objectives for each Chapter are posted on Blackboard

Upon completion of this course, students should:

- Understand the basic physical principles underlying chemistry and be able to apply them both to qualitatively explaining phenomena and quantitatively predicting or interpreting outcomes.
- Be able to perform simple chemical techniques and apply chemical theory in the laboratory setting.
- Understand and be able to explain fundamental ideas in the practice of science, including the nature of scientific evidence, the scientific method, and appropriate practices with respect to record-keeping, safety, and treatment of data.
- Students should be able to apply principles of chemistry to understanding its role in other fields (e.g. biology), while understanding its underpinnings in physics and mathematics.

ONLINE SUPPLEMENTS AND INFORMATION:

<http://www.brooklyn.cuny.edu/web/academics/schools/naturalsciences/undergraduate/chemistry.php>
(Chemistry Department Homepage)

<http://www.brooklyn.cuny.edu/web/academics/centers/learning.php> Brooklyn College Learning Center
(free tutoring available)

<http://userhome.brooklyn.cuny.edu/mkobra/labvideos.html> (Lab instruction videos)

COUNSELING

Coordinator for General Chemistry

Health Profession Counseling

Undergraduate Advisor

Prof. Joann Mathias

jmathias@brooklyn.cuny.edu

Dr. Steven Silbering

silbering@brooklyn.cuny.edu

Prof. Aneta Mieszawska

aneta.mieszawska@brooklyn.cuny.edu

GRADING:

<p>Your final grade will be a weighted average calculated as follows:</p> <p>30% Two lecture exams 20% Recitation quizzes 18% Laboratory reports 7% Two laboratory quizzes 25% Final Exam</p>	<p>Final grades are not curved, but are set according to the following scale:</p> <table border="1"> <tr> <td>95 or higher: A+</td><td>68-69.9: C+</td></tr> <tr> <td>87-94.9: A</td><td>62-67.9: C</td></tr> <tr> <td>85-86.9: A–</td><td>58-61.9: C–</td></tr> <tr> <td>82-84.9: B+</td><td>50-57.9: D*</td></tr> <tr> <td>72-81.9: B</td><td>Less than 50: F</td></tr> <tr> <td>70-71.9: B–</td><td></td></tr> </table> <p>*Note: If you earn a grade of D, that is the grade you will receive. Requests to change it to an F will not be honored.</p>	95 or higher: A+	68-69.9: C+	87-94.9: A	62-67.9: C	85-86.9: A–	58-61.9: C–	82-84.9: B+	50-57.9: D*	72-81.9: B	Less than 50: F	70-71.9: B–	
95 or higher: A+	68-69.9: C+												
87-94.9: A	62-67.9: C												
85-86.9: A–	58-61.9: C–												
82-84.9: B+	50-57.9: D*												
72-81.9: B	Less than 50: F												
70-71.9: B–													

LECTURE EXAMS:

FIRST EXAM: Tuesday, October 13, 11:00 AM – 12:30 PM

Ch. 12, 13 and 14

SECOND EXAM: Tuesday, November 24, 11:00 AM – 12:30 PM

Ch. 15, 16, 17 (+4), 19 and 8

FINAL EXAM: Tuesday, December 15 11:00 AM – 1:00 PM (CUMULATIVE, ALL Chapters)

See pages 6–7 for more details on exams on-line

Chemistry 2100 RECITATION AND LABORATORY (see page 8 for lab experiments)

Your RECITATION/LAB INSTRUCTOR will provide all details regarding your on-line REC/LABS.

Make sure you enter your RECITATION AND LAB Blackboard section(s) as soon as possible.

Recitation and Lab Instructors: contact your rec/lab instructor if you have any questions re rec/lab

NT**AL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**AB** (lab), NT**AR** (rec) **Shakeela Jabeen** Shakeela.Jabeen@brooklyn.cuny.edu
 (NTAR recitation Mo 9:00AM - 9:50AM)

NT**BL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**BB** (lab), NT**BR** (rec) **Sarah Belh** Sarah.Belh@brooklyn.cuny.edu
 (NTBR recitation We 8:00AM - 8:50AM)

NT**CL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**CB** (lab), NT**CR** (rec) **Laura Juszczak** LJuzak@brooklyn.cuny.edu
 (NTCR recitation Th 4:00PM - 4:50PM)

NT**DL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**DB** (lab), NT**DR** (rec) **Aleksandr Kelebeyev** AKelebeyev@brooklyn.cuny.edu
 (NTDR recitation Fr 9:00AM - 9:50AM)

NT**EL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**EB** (lab), NT**ER** (rec) **Aleksandr Kelebeyev** AKelebeyev@brooklyn.cuny.edu
 (NTER recitation We 1:15PM - 2:05PM)

NT**GL**(lecture) M. Ciszowska (Tu 11:00AM - 12:30PM)

NT**GB** (lab), NT**GR** (rec) **Inna Bakman-Sanchez** Inna.Bakman@brooklyn.cuny.edu
 (NTGR recitation Mo 1:00PM - 1:50PM)

ACADEMIC DISHONESTY IS PROHIBITED IN THE CITY UNIVERSITY OF NEW YORK.

Cheating, plagiarism, internet plagiarism and obtaining unfair advantages are violations of policies of academic integrity and are punishable by penalties, failing grades, suspension and expulsion.

For more information about CUNY policy on academic integrity see

<http://web.cuny.edu/academics/info-central/policies/academic-integrity.pdf>

STUDENT DISABILITY SERVICES

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell at 718-951-5538. If you have already registered with the Center for Student Disability Services please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.

STUDENT BEREAVEMENT POLICY

Students who experience the death of a loved one during the semester should consult the student bereavement policy here: <http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php>

NON-ATTENDANCE DUE TO RELIGIOUS BELIEFS

Students who are unable to attend class due to religious observations should consult the Brooklyn College Undergraduate Bulletin for the college's policy, and contact the lecturer to discuss the issue. Students must come forward with the issue in a timely manner.

LAB EXEMPTIONS:

If you are repeating the course you may be able to obtain lab exemption; file "General Lab Exemption Form" in the Chemistry Department Office (359 NE) or download it from.

<http://www.brooklyn.cuny.edu/web/academics/schools/naturalsciences/undergraduate/chemistry/forms.php>

and e-mail it to: Margarita.Rice@brooklyn.cuny.edu

Students who receive lab exemptions **MUST take all Recitation and Lecture Tests**. Lab exempt students may choose to retake the lab quizzes for a higher grade. Speak to your assigned lab instructor to arrange this.

IMPORTANT DATES, DROP/ADD DATES:

September 1	Last day to add a course
September 2	Last day to drop a course with a "WD" grade
September 7	Last day to submit a Pass/Fail elective application online
September 16	First day to withdraw with a "W" grade
November 6	Last day to withdraw from a course with a grade of "W"

To withdraw, you must withdraw using CUNYFirst.

PASS-FAIL OPTION:

Details regarding taking courses on a pass/fail basis are given in the Brooklyn College bulletin. Students interested in this option should read the bulletin carefully, as they may not be eligible to do so; questions should be directed to the Registrar. Also note that the deadline to declare an intention to take a course Pass-Fail varies from semester to semester, but generally falls within the first two weeks of the course (contact the Registrar for the specific date). After this deadline, it is impossible to take the course Pass-Fail.

CHEM 2100 ASSIGNED READING AND HOMEWORK PROBLEMS

See *Lecture Schedule* posted on Blackboard for recommended schedule and lecture exams coverage

TEXTBOOK: *Chemistry 2e*, P. Flowers, OpenStax, 2019 <https://openstax.org/details/books/chemistry>

Below is the assigned reading and a corresponding set of homework problems. Read the material at least once before watching lecture video, and spend some time on the in-chapter problems to reinforce it.

Unless noted otherwise, problems listed as Homework correspond to the end-of-chapter problems for the corresponding chapter. Answers to odd-numbered problems are at the end of the text. **If you are instructed to memorize something, the test's questions will be written assuming you have done so.**

Homework is assigned but **not graded**. Examination questions will mostly be similar to those given in the text. You should do as many of these as possible before recitation section, and bring any questions you have on the work to your instructor. Remember: Your recitation time is your chance to get help with things you do not understand. If you have not done the homework, you will get little out of it.

UNIT	Assigned Reading and Problems
Kinetics	Chapter 12: Problems 1, 3, 4, 5, 6, 7, 12, 13, 15, 17, 19, 21, 23, 25, 26, 29, 31, 37, 44, 46, 47, 53, 68, 69, 70, 71, 73, 74, 76, 79, 81, 83, 84 Note: In Section 12.4, you are not required to be able to work problems using the 0 th order or 2 nd order integrated rate laws. You are also not required to determine the order of a reaction rate by graphing, as described in Example 12.7. However, you do need to be able to use the 1 st order integrated rate law in ways similar to that shown in Example 12.6. You should also know what the half-life of a reaction is, and how it is related to the rate constant in a first-order reaction (see the subsection of 12.4 "The Half-Life of a Reaction.")
Fundamental Equilibrium Concepts	Chapter 13: Problems 1, 3, 5, 6, 7, 9, 11, 13, 15, 17, 19, 25, 29, 31, 33, 35, 37, 39, 40, 41, 45, 46, 49, 53, 55, 57, 59, 61, 65, 67, 69, 75, 77, 79, 81, 83, 89
Acid-Base Equilibria	Chapter 14: Problems 1, 3, 5, 9, 11, 15, 17, 19, 21, 25, 27, 29, 31, 35, 47, 51, 53, 57, 58, 61, 69, 77, 79, 81, 86, 87, 89, 91, 94, 95 Memorize: Table 4.2, identities of some common strong acids (not a misprint, see the table in Chapter 4).
Equilibria of Other Reaction Classes	Chapter 15, Sections 15.1–15.2 (NO section 15.3): Problems 1, 3, 9, 11, 13, 15, 25, 29, 31, 33, 37, 49, 55, 61, 63, 65, 67, 69, 75, 77
Thermodynamics	Chapter 16: Problems 1, 2, 3, 13, 15, 17, 19, 20, 21, 25, 27, 30, 31, 33, 35, 37, 39, 41, 45, 55, 61, 63, 65, 66
Oxidation-Reduction Rxns Electrochemistry	Chapter 4, Section 4.2: Oxidation/Reduction Reactions (Balancing by half-reaction method): Problems 17, 37, 39, 41 Chapter 17, Sections 17.1–17.4 ONLY: Problems 3, 5, 6, 7, 19, 21, 23, 25, 29, 31, 33
Transition Metals and Coordination Chemistry	Chapter 19: Problems 1, 2, 26, 27, 28, 29, 31, 33, 35, 37, 41, 45, 47 Supplement: Chirality in Inorganic Chemistry – Read section and do the exercise at the end of the packet (answers in packet).
Advanced Theories of Covalent Bonding	Chapter 8, Sections 8.1–8.3 ONLY: Problems 1, 3, 7, 9, 10, 11, 12, 14, 15, 17, 23, 27, 29, 30
Organic Chemistry	Chapter 20, Section 20.1, Functional Groups (Follow Lecture Notes) : Problems 1, 5, 6, 7, 9(a-c, e), 11c, 12(c,d), 15, 17, 22(a,c), 43, 44 Supplement: Chirality in Organic Chemistry
Biochemistry	Biochemistry lecture notes
Nuclear Chemistry	Chapter 21: Problems 1, 3, 13, 15, 17, 21, 32, 33, 35, 41, 45, 49, 51, 53, 57

ALL INSTRUCTIONAL ACTIVITIES WILL BE CONDUCTED ON-LINE

see Lecture Schedule posted on Blackboard in "Course Documents"

This document describes plans for the **course LECTURE only**.

You will receive **separate documents** explaining how the **recitation and laboratory** components of the course will be conducted.

ALL MATERIALS (announcements, important documents, lecture videos, lecture notes, interactive meetings videos, practice tests, exam answer keys, and more) will be **posted on BLACKBOARD**.

Material presented on Blackboard will supplement the assigned readings of the Textbook Chapters. If not specified otherwise, you are responsible for the entire chapter.

Examinations will be written on the assumption that students have performed the assigned problems from the textbook as well as reviewed materials provided by the instructor.

A description of the actual conduct of the course is below.

I. COMMUNICATION

ALL announcements to students, lecture videos (mp4 files), lecture notes (pdf files), required materials, and supplementary materials will be provided through the **BLACKBOARD** system.

ALL e-mail messages will be sent from **Blackboard**. Make sure that you **check your e-mail on daily bases**.

Questions related to course material or management of the course should be posted to **BLACKBOARD'S DISCUSSION BOARD**; appropriate forums will be created. Questions related to your specific situation should be sent by e-mail, but I ask that if a question does not involve something specific to your situation that it be posted to the forums so that all students can benefit from the answer. Remember that images can be uploaded to the forums, so you can upload your work as a picture or scan. If you need a personal meeting with me, please send me an e-mail and I will arrange it.

Interactive Synchronous meetings will be held **Tuesday, 11:00 AM – 12:30 PM**. These will be held in **Zoom**. Questions should be asked in chat mode.

It is **REQUIRED** that questions for synchronous sessions are **e-mailed** to your instructor or posted first on the **Discussion Board** forums and synchronous hours are used for follow-up questions. Attendance for Zoom synchronous sessions is NOT mandatory. I will attempt to record these synchronous sessions for later posting. However, I do not guarantee a record of this material. If technical issues interfere with recording or uploading these sessions I will not create additional resources. If you miss the session and it is not uploaded, you will have no way to access it.

Please note that **some Tuesdays 11:00 AM – 12:30 PM** will be devoted to two **Lecture Tests (October 13, November 24)** and **Final Exam (Tuesday, December 15, 11:00 AM – 1:00 PM)**.

II. PRESENTATION OF MATERIAL

The primary goal of the lecture is to present new material in a way that supplements the textbook. I will post **lecture videos (mp4 format)** covering new material on a weekly basis. **Lecture notes (pdf files)** will be also available for the entire course.

The class will run online in an interactive mode (Synchronous) on Tuesday 11:00 AM – 12:30 PM in a Zoom session. Exact coverage for these sessions will vary, but it will supplement material that has already been uploaded rather than presenting new material. I will answer student questions (e-mailed to me or posted on Discussion Board and follow up questions) at this time, or simply work additional problems.

Brooklyn College General Chemistry II (CHEM 2100) Syllabus

Here are materials available on **BLACKBOARD**:

CHEM 2100 Fall 2020 Merged Lecture (sections NTAL, NTBL, NTCL, NTDL, NTEL, NTGL)

Folder	What is posted?	How frequently to review it?
Announcements	Important announcements regarding interactive meetings, exams, exam results, etc.	Announcements should be checked on daily bases
Syllabus	Course syllabus is posted here	The beginning of the semester, and every time you need any info.
Course Documents <ul style="list-style-type: none"> ◆ Lecture Schedule ◆ Instructor's Contact Information and Hours ◆ Study Guides ◆ Zoom Interactive Meetings ◆ Zoom Office Hrs Info ◆ Learning Objectives Chem 2100 ◆ Lecture Videos (mp4 files) ◆ Lecture Notes (pdf files) ◆ Recordings of Zoom Interactive Sessions ◆ Exam Prep and Info ◆ Exams Answer Keys ◆ Grading 	<ul style="list-style-type: none"> ◆ Lecture Schedule for the entire semester with all Asynchronous and Synchronous activities, all assignments, due dates, lecture exams dates and coverage, and the final exam date and coverage. ◆ Instructors e-mail address, and office hours ◆ Very important and helpful documents on how to study, best practices in on-line learning, etc. ◆ Info re Zoom meetings ◆ Info re Zoom meetings ◆ Learning Objectives for each Chapter ◆ Lecture Videos for each Chapter ◆ Lecture Notes for each Chapter ◆ Recordings of Zoom meetings ◆ Important info on course exams, How to prepare for your on-line exams, best practices in on-line exams ◆ Answer keys for each exam ◆ Information about course grading. 	<ul style="list-style-type: none"> ◆ The beginning of the semester, and every time you have questions regarding this course's schedule. ◆ The beginning of the semester, and every time you need it. ◆ The beginning of the semester, and every time you need it. ◆ The beginning of the semester, and every time you need it. ◆ Before you start each Chapter. ◆ Videos will be posted each week ◆ Notes will be posted each week ◆ Posted after each meeting (for a period of 2 weeks only) ◆ The beginning of the semester, and before each exam ◆ After each exam ◆ The beginning of the semester, and every time you need it.
Assignments	Lecture Exams Final Exam Practice Tests for Each Chapter	Date and time of the exam Date and time of the exam See Course Schedule for dates
Discussion Board <ul style="list-style-type: none"> ◆ Chemistry questions ◆ Course organization questions ◆ Other questions/comments 	Your questions are posted here (in appropriate Forum) Instructors answers/comments Your classmates answers/comments	Discussion Board should be checked on almost daily bases
Contacts	Your Instructor's info and contact	The beginning of the semester.

III. TECHNICAL HELP

General Technical Support at Brooklyn College

In general, requests for technical support should be directed to Brooklyn College Information Technology Services (ITS) Help Desk:

Phone: 718.951.4357

E-mail: helpdesk@brooklyn.cuny.edu

Blackboard for Students: Support Site at Brooklyn College

https://libguides.brooklyn.cuny.edu/Blackboard_for_Students

NEED HELP WITH BLACKBOARD?

Students should review Blackboard FAQs below or contact Brooklyn College Students Support

Phone: (718) 951-4357 press 4 / E-mail: StudentBlackboard@brooklyn.cuny.edu

IV. ON-LINE EXAMINATIONS

An important part of the lecture/recitation component of the course is the administration of exams.

As stated on this syllabus, we have **four Lecture Tests** and a **Final Examination** (see page 1 for details).

Administering examinations online creates many challenges, most notably with regard to exam security and academic dishonesty. Therefore, the exams will be administered subject to the following rules:

- Examinations will be open-book and open-note. Students may use the textbook, lecture notes, and any notes they have created themselves during the examination. Students may not consult other people for advice, either in-person or electronically. Doing so represents academic dishonesty and will result in a failing grade for the course if discovered.
- Examinations will be administered through the Blackboard system, with the following parameters:
 - Examinations will be timed. Students must begin the exam at or after the appointed start time and will lose access to the exam at its endpoint (it is anticipated that Lecture Tests will run on Tuesdays (see dates on page 1) from 11:00 AM to 12:30 PM), and the Final Exam from 11:00 AM to 1:00 PM).
 - Questions will be visible to students one at a time. Students will be able to see only one question, and will not be able to see the next question until the current one is submitted. Once submitted, examination questions cannot be reviewed or changed (*i.e.* no “backtracking” to questions that have already been answered).
 - Examination questions will be randomized. All students will receive the same set of questions, but these will be presented in a random order to each student.
 - Students will be able to see their scores and review their answers a few days after completion of the exam.

I am aware that these parameters will make for a difficult transition to a new style of testing. Respectfully, these are recommended as best practices for online testing and I am implementing them to do as much as possible to retain a secure environment for testing. While clearly this does not rule out the possibility of academic dishonesty, it at least reduces the scope of possible strategies.

In order to give students a chance to adjust to the new style, I will create short quizzes for some chapters that students can take at their leisure, and as often as they like (these will not be graded). I may create additional resources along these lines to allow further practice.

With regard to the risk of technical problems during the examination, further instructions will be provided. However, at a minimum, students are encouraged to plan to take the examination using a **Firefox** or Chrome browser, and to use wired (rather than wireless) internet connections if at all possible.

Students who are registered with the Students with Disabilities office and require accommodation should contact the instructor *via* e-mail for further guidance.

Further instructions for tests/examinations will be forthcoming on Blackboard.

Laboratory Experiments

see your Lab Blackboard section for details and dates, or/and consult your lab instructor

Experiments numbers follow the lab textbook: *Experiments in General Chemistry*, M. N. KobraK, Ed., Fourth or Third edition. Kendall/Hunt, Dubuque, IA, 2017 (2012).

Meeting #	Laboratory Assignment
1	Experiment 13: Qualitative Analysis Part I
2	Experiment 15: The Rate of Reaction
3	Experiment 16: The Equilibrium Constant of Bromothymol Blue
4 & 5	Experiment 14: Qualitative Analysis Part II
6	Lab Quiz 1 (Exp # 13, 15, 16, 14)
7	Experiment 17: Buffers
8	Experiment 18: Determination of Vitamin C Concentration by Iodometry
9, 10 & 11	Experiment 20: Synthesis and Analysis of an Amminenickel(II) Complex Compound (3 parts)
12	Experiment 19: Electrochemical Cells
13	Experiment 21: Polarimetry of Sugar Solutions
14	Lab Quiz 2 (Exp # 17, 18, 19, 20, 21)

Chemistry Careers In and Out of the Laboratory

A degree in chemistry opens doors to dozens of exciting and rewarding careers. Here are just a few possibilities.

- Get involved in product development, manufacturing, or quality control for companies producing anything from chemicals to pharmaceuticals to textiles.
- Go on to obtain a MS or PhD in chemistry, biochemistry, biotechnology, bioinformatics, pharmacology, or any other biomedical field, and take a leading role in medical research. Design and test new drugs and medical devices.
- Get involved in sales and marketing for chemical and pharmaceutical firms. Companies are always looking for people with a strong technical background to market their products, and will pay top dollar for them.
- Go into the field as an environmental chemist to study and protect the natural world.
- Use your skills in interesting and challenging ways, from evaluating risk for insurance firms to restoring artwork for museums.
- Work in law enforcement, in anything from forensic investigation to health and safety regulation. Or work inside the political process at a government agency to help formulate policy on scientific, medical and environmental issues.
- Pursue a career in patent law and help bring the next great scientific breakthrough to the market. Or work in the U.S. Patent and Trademark Office to insure that inventors' rights are protected.

Salary Information

Chemistry Degree	Median Starting Salary*	Median Base Salary (all chemists)**
BA or BS	\$39,600	\$77,000
MS	\$55,000	\$87,000
PhD	\$75,700	\$105,000

*From *Chemical and Engineering News*, June 2, 2014, p.28.

**From *Chemical and Engineering News*, November 9, 2015, p. 30.

Chemists do sometimes have to change jobs or make career choices, but their skills are always in demand. In 2009, the U.S. unemployment rate peaked at 10.1%; the rate for chemists and chemical engineers that year was 3.9%. (see S. L. Rovner, *Chemical and Engineering News*, Nov. 7, p. 34, 2011). A skilled chemist is a valuable commodity.

Salaries for chemists are high, but do not do justice to the excitement of the field. Science as it is practiced today is collaborative, and chemists have abundant opportunities to travel, to work with interesting people, and to present the results of their work in ways that have a profound influence on the world. Science will shape the world of the 21st century, and you have the chance to be part of that process.

Medical School, the Chemistry Major, and You

Fiction #1: Being a chemistry major will hurt my chances for medical school, because the hard courses may lead to a lower GPA.

Fact: Students majoring in mathematics and the physical sciences (this includes Chemistry) have the highest medical school acceptance rate of any major:

Primary Undergraduate Major	Acceptance Rate
Mathematics and Physical Sciences (including Chemistry)	46%
Biology and Health Sciences	40%
Humanities and Social Sciences	43%
Other	40%

Based on data for the entering class of 2018, reported by the American Association of Medical Colleges

Table compiled from data available at <https://www.aamc.org/>

Fiction #2: Chemists have to take a lot of hard courses so they don't have time to do volunteer work, research, and other activities that help with medical school applications.

Fact: A student who has completed his or her requirements for medical school can obtain a chemistry degree with as few as five additional courses. This leaves plenty of time for other activities.

Fiction #3: If I don't get into medical school, I may be stuck working in a lab all day.

Fact: Chemists have enormous opportunities outside the lab. Chemical and pharmaceutical companies desperately need managers and salespeople with chemical knowledge, and will pay top dollar for them. Chemists also find work in finance, insurance, law, government and manufacturing. Go to the American Chemical Society website on Careers (<https://www.acs.org/content/acs/en/careers.html>) and use the "College to Career" link.

Some other advantages of being a chemistry major:

- Chemistry majors can receive credit for performing research work with a faculty mentor. This means the time you spend on research gets you closer to graduating and your research experience appears on your transcript.
- Chemistry majors get the skills they need to perform advanced laboratory work, so they can get better research positions, accomplish more and get stronger letters of recommendation from their mentors.
- Thanks to generous donations by alumni, the Department of Chemistry is able to give out more than \$10,000 every year in fellowships, scholarships and awards. These are an aid to both the pocketbook and the resumé.
- Brooklyn College's first Rhodes Scholar of the 21st Century was a Chemistry major.