

# CHEMISTRY 256

## Laboratory Schedule and Experiment Due Dates for Spring 2022

**Chemistry 256-01** meets on Monday from **1:00–4:50 pm**, ISC 2018 & 1064

**Course Instructors:** **R. D. Pike** (ISC 1039A, ext. 12540, rdpike@wm.edu)

**Office Hours:** Monday 9:00-10:30 am (*Zoom*), Thursday 1:30-3:00 (in-person), and by appointment

**Teaching Assistant:** John Davis (jpdavis01@email.wm.edu)

**Scope of the Course:** Experiments in analytical chemistry and inorganic chemistry

**Registration deadlines:** Add/drop deadline: Friday Feb. 4. Withdraw deadline: Monday March 28.

**Intended Audience:** Students taking (or with AP credit for) Chem 205 and 208

**Laboratory Reports:** (75%) Lab reports are to be handed in for each experiment according to the schedule shown below. A Word template for the lab reports is provided on Blackboard. *One lab report may be missed without penalty this semester.*

**Laboratory Notebooks:** (25%) Good notebook keeping is very important. Abbreviated procedures and all observations are to be recorded in pen in a bound laboratory notebook. Notebooks are to be turned in for grading at the end of the semester.

**Lab Final Exam:** None!

Date	Report Due	Experiment
—		<b>1</b> Treatment of Data (Do prior to first class.)
Jan. 31	—	<b>2</b> Titrimetric Methods: 1) chloride in urine, 2) dissolved oxygen in water
Feb. 7	1	<b>3</b> pH Measurements and Titrations
Feb. 14	2	<b>4</b> Visible Absorption Spectrophotometry
Feb. 21	3	<b>5</b> Electrochemistry <b>6</b> Synthesis of CuCl-Thiourea Complex
Feb. 28	4	<b>7</b> Determination of a Cation Mixture Using Ion Exchange
Mar. 7	5	<b>8a</b> Synthesis of Copper Complexes with 4,4'-Bipyridyl <b>9</b> Metal Oxalate Complexes
<b>Spring Break -- No Laboratory</b>		
Mar. 21	7	<b>8b,8c</b> Equilibrium Study and Copper Analysis of Copper (I)-4,4'-Bipyridyl Complexes <b>6</b> Copper Analysis of Cu-Thiourea Complex
Mar. 28	9	<b>10</b> Linkage Isomerism (synthesis) <b>11</b> Thermogravimetry
Apr. 4	6 8	<b>10</b> Linkage Isomerism (FTIR) <b>12</b> Atomic Absorption Analysis
Apr. 11	11	<b>13</b> Electronic Instrumentation <b>14</b> X-Ray Crystallography: 1) crystal growth
Apr. 18	12	<b>14</b> X-Ray Crystallography: 2) crystal selection and mounting
Apr. 25	10	<b>14</b> X-Ray Crystallography: 3) structure solution (ISC 2018)
May 2	13 & notebook	<b>No lab report is to be prepared for experiment 14</b>

**COVID statement:**

This semester, the world will enter its third year with COVID. As we experience a fifth surge of pandemic with the highly transmissible omicron variant, it is reasonable to expect significant levels of infection at W&M. As an academic community based on faculty and students *convening*, spring 2022 courses will largely consist of in-person instruction. All of us will follow W&M requirements - vaccinations and boosters, indoor masking, as well as quarantine and isolation when ill. That last is really important: for those who have tested positive, W&M's requirements must be fulfilled before class can be attended in person, and, out of an abundance of caution, anyone with symptoms consistent with COVID- even if they don't have a positive test- should not come to class.

Please note that testing positive for COVID or any other temporary illness is not considered a disability as defined by ADA guidelines and is not under the purview of W&M's Student Accessibility Services (SAS). Thus, any questions should be addressed via email to the instructor.

Faculty and teaching assistants could become ill or need to isolate during the course of the semester. If this occurs the department will provide a suitable substitute so that no lab meetings are cancelled.

**Notice on student absences and attendance policy:**

Since it is a laboratory course, Chem 256 will be held in-person. You are expected to arrive on time for your lab each week. Please make every effort to do so.

Medically related, and in some cases personally related, excused absences will be allowed for students by Prof. Pike, following these guidelines.

- If possible please notify me in advance if you must miss a lab. If circumstances prevent you from notifying me prior to the absence please notify me within one week following the missed lab and provide a reason for the absence. Understanding your situation will help me provide the support you need to successfully complete this course.
- Please note that you still will be responsible for understanding the material covered in any missed labs and will be tested on them.
- For experiments missed (whether fully or in part), the student is still expected to turn in a lab report. This will be done by obtaining the needed data from another student (usually their lab partner) or in last resort from Prof. Pike. In some cases, the student may be required watch a video related to the missed experiment and use the data from the video for preparing their lab report.
- Although students will be medically excused from labs as needed, no student can acceptably complete Chem 256 having missed more than four lab meetings. If medically excused from more than four labs, the student will be encouraged to either medically withdraw from the course or to take an incomplete in it.

**Safety Policies:** All students are required to read through and return a signed copy to Prof. Pike of the Chem 256 Safety Agreement, which may be found on Blackboard.

**Student Accessibility Services:** William & Mary accommodates students with disabilities in accordance with federal laws and university policy. Any student who feels they may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2512 or at sas@wm.edu to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please see [www.wm.edu/sas](http://www.wm.edu/sas). Students are responsible for adhering to their SAS-approved time limits on assessments.

**Diversity & Inclusion Vision Statement:** William & Mary values and actively nurtures an environment of diversity and inclusiveness where every individual is embraced, respected, and afforded the same opportunity to grow, to succeed, and to contribute to William & Mary's success.