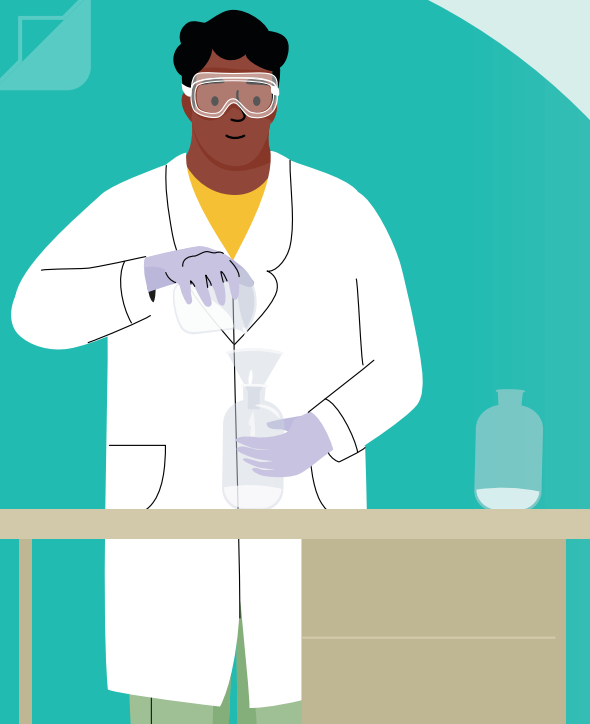


## Why Adopt the ACS Lab Safety Suite?

- Saves faculty members' time for teaching and novel research
- Uses modern photos and videos that are relatable and support learning
- Presents up-to-date safety best practices that seamlessly align with academic curricula
- Prioritizes lab safety as a core competency across a wide range of learners
- Equips every member in the lab with critical risk-based safety concepts and skills
- Increases the overall awareness of the potential hazards present in the lab



## About ACS Digital Learning Solutions

### Authoritative Content

All ACS Lab Safety digital courses are peer reviewed and expertly vetted to present lab safety best practices.

### Interactive Learning Experience

Our interactive, hands-on learning experience engages learners in real-world lab scenarios and helps them retain what is taught in the courses.

### LMS Integration

The courses can be easily integrated into most common learning management systems (LMS) with one-on-one tech support.

### Accessibility

Course content is accessible (WCAG 2.1 AA) and easy to use on most common devices, such as laptop, tablets, and smart phones.

### Automatic Updates

Continuously updated course content reflects the latest scientific best practices and accessibility requirements. New versions are automatically implemented via Content Controller.

[solutions.acs.org/institute](https://solutions.acs.org/institute)



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## DIGITAL LEARNING SOLUTIONS FOR LAB SAFETY INSTRUCTION



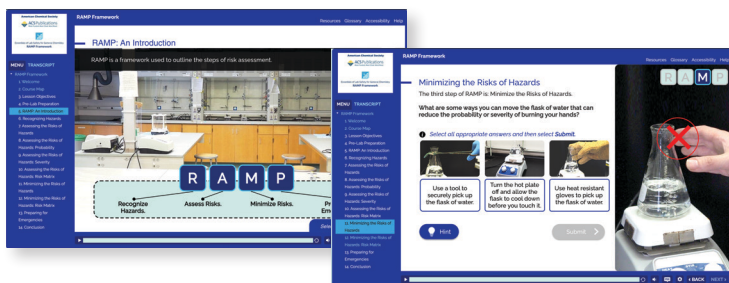
American Chemical Society

## ACS Essentials of Lab Safety For General Chemistry

Intended for use in the introductory general chemistry laboratory sequence, this course prepares students to enter the lab for the first time with a safety-first mindset. It introduces common knowledge and language to quickly build a foundation of lab safety in the classroom.

### Course Outline:

1. **Academic Success and Safety:** Outlines the importance of a positive safety culture and the students' role in maintaining a safe learning environment
2. **RAMP Framework:** Defines the steps of risk assessment with the RAMP framework
3. **Communication Matters:** Describes the role of chemical labels and GHS pictograms
4. **Best Practices to Minimize Risks:** Explores how to prepare for, conduct, and clean up after experiments
5. **Prepare for Emergencies:** Reviews how to prepare for and respond to common emergencies
6. **A Day in the Lab:** Capstone Simulation
7. **Assessment**



Intended Audience

Students who are starting General Chemistry or other introductory courses in related fields

Curriculum Alignment

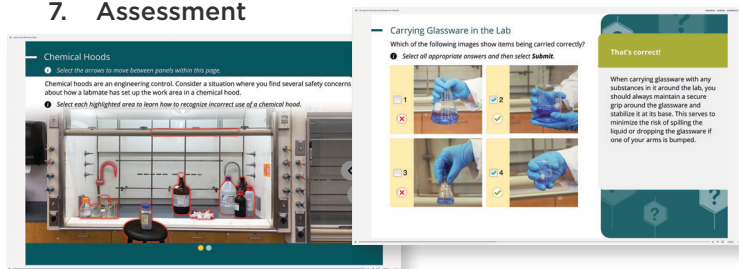
- General Chemistry sequence (I and II)
- Introductory Chemistry for STEM majors and for non-majors

## ACS Essentials of Lab Safety For Organic Chemistry

Using an inquiry-based teaching methodology, the course equips students with a deeper level of understanding on general concepts in chemical safety to prepare them for the increased hazards in the organic chemistry lab.

### Course Outline:

1. **Safety Culture and RAMP Review:** Reviews key concepts in safety culture and the RAMP framework
2. **SDS: A Deeper Dive:** Takes a closer look at Safety Data Sheets (SDS) and what can be learned from them
3. **Recognize Glassware and Equipment Hazards:** Explores common hazards in the organic chemistry lab
4. **Assess and Minimize Risks:** Takes a deeper dive into assessing and minimizing risks commonly found in the organic chemistry lab
5. **Prepare for Emergencies:** Discusses handling emergencies that are commonly found in organic chemistry labs
6. **A Day in the Lab:** A holistic situation-based practice assessment
7. **Assessment**



Intended Audience

Learners starting organic chemistry lab or taking on additional responsibilities as undergraduate staff

Curriculum Alignment

- Organic Chemistry sequence (I and II)
- Organic Chemistry for non-majors and for the health professions

## ACS Essentials of Lab Safety For Instructors & TAs

This course teaches TAs and new instructors to be confident and effective leaders in lab safety by reviewing best practices, communication skills, and role-modeling behaviors.

### Course Outline:

1. **Introduction:** Reviews valuable tips on how to guide laboratory students to work safely and explains safety culture, roles, and responsibilities effectively
2. **Risk Assessment:** Introduces the RAMP framework that is used to outline the steps of risk assessment
3. **Leadership in the Lab:** Explore tips on becoming effective role models and leaders while running the lab
4. **Communication:** Describes scientific communication between lab leaders and their students to help establish a strong safety culture
5. **Emergency Preparedness:** Outlines the skills necessary to respond quickly, confidently, and effectively in case of an emergency
6. **Summary:** Reviews what has been taught in this course



Intended Audience

Teaching assistants, new instructors, other teaching lab leaders

Curriculum Alignment

- Independent study
- TA training/orientation
- Staff training/orientation

## ACS Case Studies For Research Lab Safety

Designed for advanced learners, this course takes a case study approach in teaching risk assessment skills that are universally applicable to all research environments.

### Course Outline:

1. **Introduction to RAMP:** An introduction to the RAMP framework for risk assessment in laboratory experiments.
2. **Case Study #1: Pyrophoric Fire:** A new researcher and a post-doc learn about the risks of pyrophoric waste being removed from a glovebox.
3. **Case Study #2: Piranha Solutions:** A new researcher realizes that there can even be risks involved in cleaning glassware alone.
4. **Case Study #3: Double Trouble:** Two researchers work together to try to handle too many hazardous experiments at once.
5. **Case Study #4: Chemical Storage Mishap:** An experienced researcher grapples with deteriorating chemical storage while working alone.
6. **Case Study #5: Elevating Lachrymator:** A researcher borrows a chemical from another lab and must handle a large chemical spill in the elevator.



Intended Audience

Graduate and upper level undergraduate students who are conducting research in the lab

Curriculum Alignment

- Independent study or research
- Undergraduate or graduate research safety courses