Adjusted ACS Guidelines for Approved Programs: A response to COVID-19

Committee on Professional Training
American Chemical Society June 22, 2020

COVID-19 is bringing change and disruption to education practices worldwide, including ACS- approved programs offering bachelor's degrees in chemistry. Social distancing, new safety measures, flexibility for those that have fallen ill, and economic hardship will affect how we train our students to become successful in the COVID 19 era. As a result, the ACS Committee on Professional Training (CPT) is considering a proposal to temporarily adjust the Guidelines so that (1) chemistry majors can flexibly receive training that prepares them for a successful career, (2) chemistry majors do not extend their graduation time, and (3) programs offering bachelor degrees in chemistry have the flexibility to continue their pursuit for sustained academic excellence.

Timeframe

March 2020 to August 2021. This short timeframe will give programs the opportunity to adjust to the ongoing situation. Programs that meet the adjusted criteria listed below will be able to maintain their approved status and continue certifying majors during this timeframe. Because the needs of departments will be changing rapidly, CPT plans to revisit this plan at all meetings as the situation continues to develop. During the spring national meeting in 2021, the committee will decide whether an extension will be necessary.

Faculty (Section 3)

Adjustments to Guidelines

- Programs should maintain a minimum of five faculty members engaged in teaching foundation and in-depth courses. If you anticipate that your program will drop below 5 faculty members, please reach out to us at cpt@acs.org to discuss temporary solutions.
- Contact hour requirements will not change. When determining contact hours for faculty, assign the same number of contact hours as if the course had been taught in person.

Impact on Periodic Report Assessment

None

Suggested Best Practices

Faculty teaching virtually will likely spend more time preparing course material. Programs should consider this situation when assigning teaching duties.

Infrastructure (Section 4)

Adjustments to Guidelines

None

Impact on Periodic Report Assessment

- Instrument repair and maintenance may not be possible due to budgetary or lab access restrictions. Programs will not jeopardize their approval status due to failing instrumentation during this period.

Suggested Best Practices

- If an essential instrument fails or is decommissioned, programs should explore access to instrumentation elsewhere or restructure the activity to meet the desired learning outcomes.
- Access to library collections is critical to maintain academic engagement. Priority should be given to electronic holdings that have direct benefit to research conducted in the program and to the teaching mission of the program.

Curriculum (Section 5)

As a core value of ACS, safety is paramount, and we support following OSHA and CDC guidelines in consultation with your institution when developing course structure.

Adjustments to Guidelines

- If programs are not able to meet the guidelines that require five foundation courses and four in-depth courses to be taught annually, they will have the opportunity to provide an explanation (e.g. low enrollment, redistribution of teaching duties and staffing, program cutbacks, scheduling issues) in their annual reports.

Impact on Periodic Report Assessment

- No distinctions will be made between courses that are offered in person, virtually, or by using a hybrid or blended model (virtual and in-person).
- When determining the number of hours of class time, assign the same number of hours as if the course had been taught in person.

Suggested Best Practices

- Curricular coverage and assessment practices in the courses offerings should be modified and adjusted to meet course and learning objectives.
- Programs should ensure that course offerings are sufficient so that students can graduate on time.

Laboratory Experiences (Section 5)

The goal should be to provide all majors housed in the chemistry department or program with the missed hands-on experiences before completing their degrees. Programs should be able to demonstrate how temporary program modifications will allow students to meet the program's laboratory learning goals.

Adjustments to Guidelines

- Laboratory courses and activities can be modified extensively to observe all physical distancing and other safety practices implemented at your institution.

Impact on Periodic Report Assessment

- Laboratory modifications will not affect your approval status, however, the expectation is for the department/program to resume face-to-face laboratory experiences when deemed safe and feasible.

Best Practices

CPT encourages faculty to closely examine their learning goals with an eye to how they can creatively accomplish as many of them as possible and plan for how to deliver any missed learning goals in immersion-style short courses, other courses, or through other means.

Safety considerations stipulated by your institution and by regulatory agencies must guide the decision to use any of these experiences.

In designing instruction, consider the recommendations under two modes of instruction that are being reported by multiple programs:

- Programs that are 100% virtual:
    - Hands-on experiences (e.g. preparing samples, purifying a compound) are extremely difficult to provide through virtual platforms.
    - In-person experiences for students taking labs may be accomplished using at-home kits as it may not be feasible to offer in-person instruction, again allowing safety considerations to guide in the decision to use these kits.
    - Online laboratory courses offered can focus on other lab-related skills (e.g. visual observations, record keeping, data collection, data analysis and interpretation, group discussion, report writing, and presentations) alone or as part of dry-lab courses.

    - Missed hands-on skills could be covered in an immersion-style short course (or equivalent) when in-person training becomes feasible. CPT is working on a list of experiences that are best developed through a physical presence in the laboratory. See companion document.

- Programs adopting a hybrid system:
    - These programs should consider covering essential hands-on experiences in person, while offering training of other lab experiences virtually.
    - Hands-on experiences could be offered in an immersion-style short course, through rotations, short courses, or off-site (if the program can ensure safety and account for liability).

Certification of Graduate (Section 9)

Adjustments to Guidelines

None

- Students completing a certified degree in this timeframe, should do their best to complete all degree requirements. Due to limits in course offerings, CPT supports chairs giving some latitude in certifying degree recipients.

Impact on Periodic Report Assessment

None

Suggested Best Practices

- Other pedagogical experiences (e.g. directed virtual learning) may be used to replace courses that are not being offered, as long as such experiences have similar learning outcomes.
- Department chairs should work to find creative ways to ensure that their students have as many hands-on laboratory experiences as possible with as broad a coverage as possible.
- Department chairs can count the lab time (hybrid, virtual, etc.) accrued by chemistry majors during the time period for certification of degrees earned after summer 2021 toward the 400 hour lab requirement.