

Syllabus Evaluation Guidelines—AP Chemistry

What's here? *Evaluation Guidelines* and *Important Considerations*

AP Course Audit Reviewers use requirement-specific *Evaluation Guidelines* as they consider the evidence provided for a number of curricular requirements. A requirement's *Evaluation Guidelines* help reviewers gauge evidence presented in a syllabus to determine if it meets the requirement. In other cases, the curricular requirement and the nature of its evidence are such that no *Evaluation Guidelines* are needed for Reviewers to make a determination.

Important Considerations provide advice from the Senior Reviewers regarding common pitfalls to avoid and suggestions for making the evidence in your syllabus as clear as possible. They can assist you in developing and refining your syllabus. The *General Important Considerations* address the entire

syllabus across all AP courses. Requirement-specific *Important Considerations* provide either helpful insights about the application of a requirement's *Evaluation Guidelines* or other applicable advice from the Senior Reviewers.

How can I use this information? Use the *Evaluation Guidelines* and *Important Considerations* to review and evaluate your own syllabus prior to final submission. Make sure that you have provided explicit evidence as described. To become familiar with both the nature of 'evidence' and the variety of formats in which evidence can be presented for any one curricular requirement, see the sample syllabi and Evidence Tables presented elsewhere on AP Central. The most important consideration is that your syllabus (the evidence) clearly and explicitly satisfies the curricular requirements in their entirety.

General Important Considerations

- 1.) **Syllabi must clearly demonstrate coverage of the content identified in the course's curricular requirements.** Teachers need not include incontrovertible proof of every portion of a topic that appears in the AP Course Descriptions, but should be mindful of providing evidence on their syllabi that will fully demonstrate the degree to which a topic is covered.
- 2.) The College Board does not mandate the use of particular textbooks or resource materials in an AP course. However, to confirm that the course as a whole provides students with the content delineated in the curricular requirements for the course, **the syllabus must sufficiently cite (author, title, and edition) the resource materials** used to meet those requirements.
- 3.) If you choose not to meet one or another of the curricular requirements, but nonetheless provide a college level experience for your students in an alternate manner, you must explain your alternate approach on the syllabus you submit.

<p>The course provides instruction in</p> <ul style="list-style-type: none"> • Structure of matter (atomic theory and structure, and chemical bonding), • States of matter (gases, liquids and solids, solutions), • Reactions (reaction types, stoichiometry, equilibrium, kinetics). 	<p>Evaluation Guidelines:</p> <p>1. Mentioning a practice or topic delineated in the requirement is sufficient evidence when the resource materials collectively demonstrate coverage of the content. Specific chapters or sections need not be associated with the practice or topic.</p> <p>Important Considerations:</p> <ul style="list-style-type: none"> • If the syllabus sufficiently cites (author, title, and edition) textbooks or materials included in the College Board’s example textbook lists, then the requirement has been satisfied. • If the reviewer is not familiar with a syllabus’ textbook that is not included in the example list and cannot find evidence of a requirement, then the requirement is not met and the “alternate approach” rationale will be applied. • If there are absolutely no materials listed (textbooks or otherwise), then all requirements dependent on resources materials are not met and the “lacks resource materials” rationale will be applied. <p>2. When the sub-topics outlined in the AP Course Description are not identified within the requirement, they are not considered requisite. Syllabi do not need incontrovertible proof of every portion of a topic as listed in the AP Course Description. Since there are some subtopics specifically identified in these course requirements (e.g. “atomic theory and structure,” “chemical bonding,” etc.), these subtopics <i>are</i> considered requisite.</p> <ul style="list-style-type: none"> • If a reasonable inference <i>based on available evidence</i> in the syllabus can be made about the coverage of a practice or topic delineated in a requirement, then the syllabus satisfies the requirement. <p>3. If a particular practice or topic in a requirement is not stated explicitly but it is reasonable to infer its existence based on explicit evidence of other related practices or content coverage within the syllabus, then the requirement has been satisfied.</p>
<p>The course provides instruction in</p> <ul style="list-style-type: none"> • descriptive chemistry (relationships in the periodic table) 	<p>Evaluation Guidelines:</p> <p>There is sufficient evidence that a syllabus “provides instruction” when relationships within the periodic table and chemical reactivity are included in the syllabus.</p>
<p>The course provides instruction in</p> <ul style="list-style-type: none"> • laboratory (physical manipulations; processes and procedures; observations and data manipulation; communication, group collaboration, and the laboratory report) 	<p>Evaluation Guidelines:</p> <p>Physical manipulations, processes and procedures, observations and data manipulation can be inferred from the nature of the experiment. Communication, group collaboration, and the lab report, however, must be made clear.</p>

The course emphasizes chemical calculations and the mathematical formulation of principles.

Evaluation Guidelines:

This can be inferred from topics and assignments, clearly identified in the syllabus, that require calculations and mathematical formulation of principles.

The course includes a laboratory component comparable to college-level chemistry laboratories. A minimum of one double-period per week or its equivalent is spent engaged in laboratory work. A hands-on laboratory component is required. Each student should complete a lab notebook or portfolio of lab reports. (For information on the requirements for an AP Chemistry laboratory program, the Guide for the Recommended Laboratory Program is included in the Course Description.)

Evaluation Guidelines:

The syllabus must indicate the amount of time spent conducting laboratory investigations. This time may include pre- and post-laboratory work. Labs must address the skills and learning objectives detailed in the Course Description. Some of the experiments in the Course Description may be completed, in whole or in part, outside of AP Chemistry, for example in a prerequisite or concurrent course. Also, several experiments may be grouped together according to similar skills and techniques, or according to the concepts they explore and reinforce.

Each student **must** complete a lab notebook or portfolio of lab reports in order to meet the requirement.

Important Considerations:

1. **If** the hands-on lab* component meets the instructional time requirement and fulfills the objectives described in the Course Description, **then** the requirement is satisfied—even if the lab contains **additional** virtual, simulated or teacher-led investigations that supplement the course’s hands-on lab component.
2. **If** the lab program consists of a **combination of hands-on* and virtual** experiences**, but there are **not enough** hands-on experiences to satisfy the requirement, **then** the syllabus does **not** satisfy the requirement as stated. The reviewer should select the alternate approach rationale (so that this “mixed model” can be evaluated by the College Board), and document in the provided text box that the syllabus does not demonstrate enough hands-on experiences to meet the requirement as stated.
3. **If** the lab program contains parallel sets of hands-on* and virtual** labs, **and** allows schools the option to use **either one or** the other, **then** the syllabus does **not** satisfy the requirement as stated. The reviewer should select the alternate approach rationale (so that the entire lab program can be evaluated by the College Board), and document in the provided text box that the syllabus does not require hands-on lab experiences.
4. **If** the **only** lab experience offered is a virtual lab**, **then** the syllabus does not satisfy the requirement as written. The reviewer should select alternate approach (so that the virtual lab can be evaluated by the College Board), and document in the provided text box that the syllabus does not demonstrate any hands-on experiences.

*A **hands-on lab** is an interactive experience during which students directly observe and manipulate physical objects, materials, organisms, or phenomena in order to fulfill the learning objectives of a laboratory experience. These objectives include, but are not limited to, generating and exploring answers to experimental questions, gathering data and making observations, drawing and evaluating conclusions, and thinking and communicating effectively about science. The hands-on lab may be labeled a “wet lab” in the syllabus. **Note:** Reviewers can assume that labs are hands-on unless otherwise stated in the syllabus.

A **virtual lab is an interactive experience during which students observe and manipulate computer-generated objects, data, or phenomena in order to fulfill the learning objectives of a laboratory experience. These objectives include, but are not limited to, generating and exploring answers to experimental questions, gathering data and making observations, drawing and evaluating conclusions, and thinking and communicating effectively about science. The virtual lab may be labeled a “dry lab” in the syllabus.

***Note:** Virtual and teacher-led demonstrations should be considered neither a virtual nor hands-on lab experience in and of themselves, though these elements may enhance the course’s primary laboratory component.*