

Information for Instructors

ChemVantage.org

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Overview

ChemVantage is an Open Education Resource for teaching and learning college level General Chemistry. Any user can browse to <http://www.chemvantage.org> and use the site at no cost by logging in with a Google/Gmail, Yahoo, MyOpenID or AOL account.

ChemVantage also supports groups of users led by an instructor. A group is usually a class of students but could be a smaller discussion section or a larger group consisting of several classes. This document provides guidance to instructors on how to create, edit, manage and delete groups in ChemVantage.

Any chemistry instructor can get a free trial instructor account for 4 months that will support a group of up to 25 users. Beyond that (longer time, more groups or more students) we need to collect a fee (as little as \$2/user) to pay the direct costs of providing the service. To request a free trial instructor account, first create a basic ChemVantage account by authenticating to the site as described above. Then send email to admin@chemvantage.org from your institutional email address (usually from a .gov or .edu domain) requesting an instructor account.

If your school/college/institution has a Google Apps domain (i.e., uses Gmail for student email accounts), ask your Google Apps administrator to install the ChemVantage app to your domain from the Google Apps Marketplace. This will make it easy for students to find and join the correct ChemVantage group because they will see only groups in your domain. The same 4 month free trial applies but without any restrictions on the numbers of groups or students.

Group Management

As an instructor, you will have an 'Instructor' link that appears on the top navigation bar in ChemVantage. All of your group management functions are behind this link.

Create A Group In Your Time Zone

If you don't already have a group, create a new one and give it a name that your students will recognize to join it. You should select the proper time zone for your group because all assignment deadlines are at midnight (11:59:59 PM) on the date indicated. You may change the name of the group at any time.

Create Assignments

Click the 'Edit' link under 'Deadlines' for your group. Here you will see a list of ChemVantage topics for General Chemistry. Most of these bear a similarity to chapter titles in popular GenChem textbooks. To assign a quiz or homework set,

simply enter a deadline for a given topic in the appropriate box in the 'Quiz' or 'Homework' column and click the Update button. The number of questions available appears next to each deadline. You may change deadlines at any time. ChemVantage automatically recalculates the scores on all assignments when you change deadlines.

Select Question Items

Click the 'Select' or 'Assign' link next to the number of questions to customize the questions used for your class assignments.

For quizzes, each quiz will consist of 10 questions selected at random from a bank of N quizzes. Students can retake quizzes as often as desired to achieve a better score prior to your deadline. Experience shows that the optimal value of N is 40-60 questions.

For homework assignments, the selected questions will appear as 'Assigned' questions, with the balance appearing as 'Optional' questions. Each question is worth 1 point, and only the scores for 'Assigned' questions appear in your scores tables. We recommend assigning about 10 questions per topic.

Group Scores

From the 'Instructor' page, click 'Quiz', 'Homework', or 'Exam' to view your students' scores on these assignments. Exam scores consist of student practice exams where the results have been disaggregated by topic. If you change an assignment deadline or the group time zone, then all affected scores will be recalculated automatically. This can take a few minutes for classes of 300 students or more, where the numbers of quiz and homework submissions can easily exceed 100,000.

At any time, you may use the link on the Group Scores page to save a local copy of your scores as a Comma Separated Values (CSV) file. You can then open this file in Microsoft Excel to keep as a backup copy of your grades (recommended!) or to import into your LMS for computing final grades at the end of the term. Most learning management systems do not have the ability to pull scores from 3rd-party content providers like ChemVantage directly into the LMS grade book. As standards improve, we will be adding this capability in the future.

If you activate the ChemVantage Rescue Service (see below) then red dots may appear beside some students' quiz or homework scores. This indicates that the student either missed an assignment or scored low enough to trigger a concern. The red dots also appear on students' individual scores pages. If a student returns to the assignment after the deadline and completes it satisfactorily, then the red dot will automatically disappear (but will leave the group score unchanged). This is designed to be a psychological incentive for students to complete their assignments even if they miss a deadline.

Assign a Teaching Assistant

From the 'Instructor' page, click the 'Add/Drop' link under 'Enrollments'. In the User Search box, enter the last name of your teaching assistant. This will produce a list of all ChemVantage users in your domain having that name. You may simply click the button to add the right person as a TA for your group. You may also use this tool to find domain users and put them in your group (i.e., if they have established ChemVantage accounts but have forgotten to join your group). If the user is not in your domain then you can invite the user to join your group instead. This will place a reminder on the user's home page to join your group.

ChemVantage Rescue Service

On the Instructor → Edit page, you will find a link near the top to 'Show Rescue Service Options'. This is an optional service for notifying individual students and teaching assistants in your group when someone misses an assignment deadline or scores poorly on an assignment. Use the form elements on this page to configure this service to meet the needs of your group or class. You may customize the message sent to students to conform with any class policy on partial credit, and you may set the threshold number of points below which notifications are sent. This threshold is also used as the criterion for showing red dots on the scores pages. The default value is 5 points (50% score on a typical 10-point assignment). However, some assignments may have a maximum score of only 7 points, in which case you should select a lower threshold. A single threshold value applies to all quiz and homework assignments.

Basic and Premium ChemVantage Accounts

Individual users in ChemVantage may use the site without cost using a basic ChemVantage account. However, in order to join a ChemVantage group and take advantage of enhanced features, users must first upgrade to a premium account.

There are two ways to do this:

- 1) If the group is part of a Google Apps domain, the school/institution may purchase premium seats on behalf of student users at \$2/seat in quantities of 50 or more. As students join ChemVantage groups associated with the domain, these seats are allocated automatically.
- 2) If all of the prepurchased seats are all allocated, or if the school/institution declines to purchase seats in quantity, then users will be prompted to pay \$4.99 for each individual premium account upgrade.

The distinguishing features of basic and premium accounts are summarized at <http://www.chemvantage.org/About#accounts>

Authentication Options

There are several methods available to login to ChemVantage;

1. Public Sandbox

Individual users may login to the site at <http://www.chemvantage.org> and authenticate using the email address/password for their Google/Gmail, AOL, Yahoo or MyOpenID account. This process uses the third-party OpenID

authentication protocol. As a result, ChemVantage does not store, maintain or recover any user passwords, ever.

2. Google Apps Domains

As mentioned above, if an institution owns a Google Apps domain, the administrator can install ChemVantage from the Google Apps Marketplace at <https://www.google.com/enterprise/marketplace/>. This creates a private space for administrators, instructors and student users within the domain.

Users may navigate to

http://www.chemvantage.org/openid?hd=domain_name where *domain_name* is the name of the institutional domain (e.g., mycollege.edu), or by selecting ChemVantage from the Google pull-down navigation menu (the *More* tab) in Gmail, Google Docs or other Google Apps.

3. Learning Technologies Interoperability

Many college-level courses use a Learning Management System (LMS) such as Blackboard, Desire2Learn, Angel, Sakai, or Canvas to keep track of assignments, enrollments, communication and grades. Most of these LMS platforms conform to the Basic LTI standards created by IMSGlobal.org. ChemVantage conforms with the Basic LTI Tool Provider standards, and can therefore establish trusted relationships with any LMS to provide automatic authentication of students and instructors.

Authentication With Basic LTI

If you are using a course management system for your class, you may ask the administrator of your LMS to create a Basic LTI link in your course. This will allow you and your students to login to the LMS and simply click the link to be authenticated in ChemVantage. To create a Basic LTI link, your LMS admin should send a request to admin@chemvantage.org for



- A Basic LTI launch URL for ChemVantage
- An OAuth consumer key that identifies your LMS
- A shared secret that allows ChemVantage to trust your LMS to authenticate users

To function properly, ChemVantage requires that your LMS be conformant with the IMS Global Solutions Basic LTI specification v1.0 (most LMS platforms do this). If provided, ChemVantage will utilize the following information:

- user_id (opaque user identifier such as a long alphanumeric string)
- context_id (opaque identifier for a course section)
- context_title (user-readable title of the course, e.g. CHEM 101)
- lis_person_name_given (user's first name)
- lis_person_name_family (user's last name)
- lis_person_contact_email_primary (user's preferred email address)
- roles (comma separated list) The only role specifically recognized by ChemVantage is Instructor; all others are assumed to be Learner.

Any of your students who establish ChemVantage accounts through OpenID can still join your group by clicking on the 'Find My Group' box on the ChemVantage home page.

Questions and Comments

Please direct any further inquiries to Chuck Wight at admin@chemvantage.org.