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Overview and Security

The College of Lake County’s data warehouse was implemented on August 1, 2011 as a tool to provide easily accessible data on classes and students for management decision-making. The data warehouse can be queried using the Research Intelligence analytical tool—Estudias Enterprise—a system of Online Analytical Processing (OLAP) Cubes that contain relevant data elements useful for generating reports and analyses.

What Data are Included

- All students who enrolled in any CLC class beginning with the Fall 2005 term through and including registration terms. This includes college credit, adult education, vocational education and non-credit classes.
- The action of enrolling (including during registration periods) triggers a students’ data to be included.
- The student’s entire academic history (including activity prior to fall 2005) is brought into the warehouse - classes taken at CLC, transfer classes, degrees/certificates earned, specific test scores, GPA, and demographic data.
- Data from the National Student Clearinghouse identifies students who have transferred to another school.
- All class section information including scheduling, faculty, and grading information.
- Student financial aid data is included, but security is limited.

How Data are Organized: Definitions

The data are organized in logical groupings called ‘templates’ in the research intelligence tool. These are also known as ‘cubes’. The cube displays specific ‘measures’ (numerical values) for ‘dimensions’ (characteristics of the data) that you select and place as row, column, or filter variables in the ‘grid’ or ‘pivot table.’ The measures are aggregations of all the underlying data and the dimensions allow you to drill down and view the measures in the level of disaggregation desired. A data dictionary defines each dimension and measure; it is available for download in Estudias Enterprise.
Administration and Security

Guidelines on the overall administration and security of the data warehouse and its analytical tools are set by the Office of Institutional Effectiveness, Planning and Research in consultation with Educational Affairs, Student Development, and Administrative Affairs areas, as well as the Executive Staff. Overall administration is carried out by the Office of Institutional Effectiveness, Planning and Research and is managed by the Data Warehouse Project Manager.

Access to the data warehouse and its analytical tools are limited to the Data Warehouse Users Group, a selection of College of Lake County administrators, faculty and staff, who were recommended by Executive Leadership from Educational Affairs, Student Development, Administrative Affairs, or the Office of the President. Pursuant to CLC’s Policy 965 Information Security, access is provided to specific employees to enhance their job performance yet imposes on you the obligation to protect each member of the campus community “from information security threats that could compromise privacy, productivity, reputation, or intellectual property rights.” Moreover, this policy is intended to guard against violations of Family Educational Rights and Privacy Act (FERPA), which stipulates that access to student-identifying information (particularly regarding academic performance) be granted on a “need to know” basis. An Acceptable Use Statement can be found in the Appendix. You are expected to understand these regulations and you are responsible for protecting the confidentiality of student and employee data that you may observe.

More information on the Data Warehouse administration and security guidelines are in the document “CLC Data Warehouse and Analytical Tools: Procedural Guidelines for Implementation.”

Tip — A TEMPLATE or a CUBE is a collection of data elements (or fields) that are relevant for particular types of analyses. A pivot table is how the data elements are placed in a 3-dimensional grid that allows user to drill from general to specific detail levels, and to filter the display of the data.
The Basics

The Enterprise Reports of the data warehouse are “drag and drop” analytical tools. This means you may produce reports from the large amounts of data that have already been organized into logical sets of “templates” or “cubes.” You determine the: 1) dimensions to place in the row, column, and filter sections of the grid or pivot table; and 2) numerical measures that should be reported for those variables. The row and column sections of the grid or pivot table allow you to structure the report in a meaningful way. The filter section allows you to only display data based on certain category (ies) of the dimension selected as a filter. The techniques described here apply to both existing reports, as well as to creating reports from scratch.

LOG IN INSTRUCTIONS

1. The url location is https://dwhprd.clcillinois.edu

2. Log into the data warehouse with your network user id and password.

3. Select the ‘Enterprise Reports’ Link to access reports:

Getting Started

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The image below shows a blank grid or pivot table - no row or column fields, and no measures have yet been selected.

1. The data available are from the Student Classes Template or Cube (a set of data concerning students and their classes).
2. A toolbar at the top of the grid contains icons you will use to construct a report and perform other functions.

3. You can select dimensions and measures from the template or cube’s field list by clicking this icon. Click on the Data Dictionary link at the bottom of the screen to understand the definition of these dimensions and measures.
4. The grid or pivot table has pre-defined areas where you can place dimensions (4a) or measures (4b) from the cube list.
5. This grid has a default “filter” set to select students whose enrollment status is “Yes.”
How to Select or Remove Dimensions and Measures

1. Click the field from the “Dimensions” list that you want to display. Holding the mouse button, drag that field to the row or column space on the grid and release the button to drop it.
2. A double click on the field selected will automatically place it in the grid.
3. Click the field from the “Measures” or “Totals” list. Holding the mouse button, drag that field to the body of the grid, never in a row or column. The body of the grid is the area below the column and to the right of the row.
4. To remove a dimension or measure, drag it off to the area above the toolbar and drop it there.

Viewing the List of Data Dimensions and Measures

Use the “list” icon to view all of the measures and dimensions available in a template.
Where to Place Data

Determining where dimensions should be placed is a matter of understanding what the dimension is, and then experimenting with placement as row, column, or filter variables. Feel free to move the dimensions around in order to find the most useful configuration. You will not harm the data. Here are some tips:

1. If a dimension has a large number of variables (high school name for example), consider making it a row variable because it is easier to view data vertically.
2. Or, if you are interested in viewing only some of the values for the dimension, place the dimension in the “filter” section of the grid and select only the values you want. This gives you greater flexibility to choose other dimension for row or column placement.

Filtering the Data

Filtering simply means to select specific values for the dimension rather than selecting all. This allows you to focus attention on one group or a few groups of interest. Use the drop-down arrow to see all the values for that dimension. To select a value or group of values, simply click the checkbox. To deselect, uncheck the box. Any field can be filtered regardless of where it is placed on the grid, including the filter section under the template or cube name.

To filter by specific values of a dimension:

1. Uncheck ‘all’
2. Check only the values desired
3. Select ‘OK’
Selecting Multiple Row/Column Fields

It is often desirable to select more than one row dimension. This allows you to see aggregate data as well as to drill down to underlying detail. See the example below.

Drag ‘Ethnicity’ to the border between ‘Academic Level’ and ‘Unduplicated Headcount’. A blue line will appear when it’s in the right position. Expand each academic level to see the Ethnicity breakdown.
Tip - A quick way to expand (or collapse) all is to right click the field and choose ‘expand all’.

Saving in Excel

Any pre-designed or newly created report can be sent to an Excel file by clicking the Excel icon on the toolbar. The actual pivot table is downloaded into a read-only file that retains all features of filtering and drill-down. While in this format, you cannot employ standard Excel features for further manipulating the data, such as sorting, summing or applying formulae.

If you want to use the report data in a standard Excel file format it is necessary to make it a “static” file. Do this by clicking on the title bar of the data warehouse report to select the entire report, and then click on the copy icon on the toolbar. You can paste into a blank Excel file to create a static table.

Advanced Features

1. Creating “groups” of values for a specific dimension. Some of the dimensions have an extremely large number of values. For example “High School,” which is based on the high schools listed on students’ transcripts or indicated on their application, is one such large dimension. Here is how you could create a report where a set of high schools has been grouped. This can be done when creating a new report, OR in a saved personal copy of an existing report.
Example (see graphic next page):
1. Add High School as a dimension as a row.
2. While holding the ctrl key, click on the name of each high school you would like grouped.
3. Once you’ve selected all of the high schools you would like grouped, right-click on one of the high schools selected and select ‘Group Items’
The selected high schools will now appear as “Group 1,” and remaining high schools as “Other.”

2. Display numerical counts as percentages. Follow these steps to convert numbers to percentages.
Highlight the numeric column
Right click and select 'Show as'
Select 'Percent of Column Total'
Templates or Cubes – Key Dimensions and Measures

Each template or cube has specific unique reporting strengths. This section will describe which templates or cubes are best suited to provide various kinds of information. Before describing what is different about each template it is important to note several dimensions that are common to more than one template. The Research Intelligence tool can access only one template at a time, and so many dimensions are made available in multiple templates.

Dimensions Common to Multiple Templates or Cubes and What They Mean

1. **Academic Level** — All enrollments are classified by the “level” of the class as determined by the class PCS code.
   
   *This means that students who are enrolled in classes in more than one academic level can be identified and counted in each category.*

   - **College Level** includes: 
     - PCS 1.1 (Baccalaureate Transfer)
     - PCS 1.2 (Career)
     - PCS 1.4 (Developmental)

   - **Adult Education** includes: 
     - PCS 1.7 (Adult Basic Education)
     - PCS 1.8 (Adult Secondary Education)
     - PCS 1.9 (English as a Second Language)
     - PCS 1.6 with a Subject code of 'VST'

   - **Vocational Education:** PCS 1.6 (Excluding VST courses)
   - **Non-Credit** includes: 
     - PCS 1.3

2. **Starting Cohort** — Students are assigned to a starting cohort in their first term enrolled in credit courses unless they are and in high school (or of HS age), or are a transfer student from another college.
In the Student Template, an Academic Cohort dimension is created with the same definition as above, but defines the first term enrolled in college level credit classes is exclusively.

3. **Enrolled** – The warehouse includes all students who where enrolled as of the first day of class, even if they dropped prior to the 15% point. This field “enrolled” should always be used as a filter in student terms and student class templates.

What the values mean:

- **Yes** – means the student was enrolled (as of the 15% point). This includes students who received withdrawal grades.
- **No** - means the student was enrolled on the first day of classes but dropped prior to the 15% point.

**Enrolled** – *As it is used specifically in the Student Terms Template for Cohort Tracking* - In order to track a cohort of students from term to term, including terms of no enrollment, the ‘enrolled’ field has 3 values:

- **Yes** – means the same – enrolled as of the 15% point.
- **Dropped** – the student was enrolled on the 1st day of class, but dropped before the 15% point.
- **No** – means the student never enrolled that term.
Class Sections Template or Cube—This template is designed for reports related to class scheduling, instructional type, faculty, and grading information. It includes cancelled sections. Some key dimensions and measures are:

- **Active/Cancelled Status** – For prior terms “active” sections are defined as those with enrollment. For current and future terms “active” are defined as those open for enrollment
- **Dual Credit and Instructional Mode** – Defined by section code ranges used by divisions
- **Location** – has been grouped into 5 categories: GLC, SLC, LSC, Online, EXT, TBA
- **Measures available:**
  - Headcount, seat count, credit hours generated
  - Class utilization (Percentage of class seats that are filled)
  - Rates of class completion, success, and withdrawal
    - Completion – Defined as any grade except withdrawals, incompletes, or not reported (includes WF)
    - Passing – Grades of A-D or P
    - Successful – Grades of A-C or P
    - Withdrawal – Grades of W, WN, or WS but not WF

Student Classes Template or Cube—Combines academic and demographic information about each class taken by each student. Reporting that requires both kinds of detail (student and class) is most easily accessible in this template. For example it allows you to select the start of term retention status and specific term/course/class features. In addition it is best used for:

- Average cumulative GPA is calculated for specific selected dimensions such as students in a particular major, or specific course, or for a demographic trait.
- Reporting on students enrolled in specific courses in combination with other specific courses.
Student Degrees Template or Cube — Contains information about each degree and certificate earned by students in the warehouse. This template is most useful for counts of degrees/certificates earned in specific terms, comparing degrees produced year to year, in specific majors. Unique measures found only in this template are:

- **Average number of “terms to degree”** (defined as the average number of enrolled terms from the first college level term (after high school) to the degree term for the selected group of students.)
- **Normalized time to degree** – the number of average elapsed terms divided by the number of terms it should take to complete the degree type as a full-time student. A ratio of 100% means the student completed in the standard number of terms, 150% means it took 1½ times the standard number of semesters to complete.

Student Terms Template or Cube — Contains academic information about each term a student attended. This is the best source of data about students analyzed on a term by term basis. All cohort tracking reports are built using this template. There are a number of data dimensions of note:

- **Start of Term Retention Status** – Each enrolled student is assigned a value based on their status at the start of the term. IMPORTANT- always use “Academic Level” as a filter when using this dimension, and select one of the values. Values reported for this dimension are derived by looking at the students’ academic history. It reports status as New, Moved from pre-college to college level, Continuing, Returning (did not attend in the most recent regular term), or as a Transfer-In from another college.
- **Graduation and Retention Status** – This value is only populated at the end date of the term and is specific to status as of that term. A value is assigned based on enrollment, completion, and transfer-out status looking forward in time. IMPORTANT- this dimension must always be used with a specific term selected in order to provide accurate data. The value “Unknown” is reported if you select a term that has not ended. The values are Retained, Transfer-Out (to another institution), Stop-Out, Drop-Out, and Graduated.
- **Graduation Status** – This Yes/No dimension reports graduation status for the specific term only.

*TIP – In any ‘count’ of students, include academic level as a filter.*
Student Terms Template or Cube (for Cohort Tracking) - The following dimensions were created to track outcomes for a cohort of students. In order to interpret the data correctly, the following filters must be set:

### Student Terms Table Template

- **Enrolled must remain set to ALL**
- A specific starting cohort must be selected
- A specific academic level must be selected.

You can now specify any dimensions from the field list, but some are created specifically for cohort tracking:

- **Cumulative Graduation Status** – This Yes/No dimension reports if the student ever completed a degree or certificate up through and including the term specified.
- **Cumulative Term Outcome** – Provides an overall status based on all terms through and including the term specified.
- **Degree Seeking** – This Yes/No field defines students who were in a degree seeking plan in their starting cohort term specifically. IPEDs cohort tracking is limited to degree seekers.
- **Starting Cohort Full or Part-Time Status** – This field defines FT/PT status in the starting cohort term specifically.
Students Template or Cube—This template is useful primarily if you want demographic information about a group of students that is NOT related to enrollment. It contains one record per student but no term or class related data. Dimensions such as ‘major’ and ‘residency’ are reported based on the current term.
Navigating Enterprise Reports

Existing Reports, Templates and Dashboards

When first entering Enterprise Reports, you will see several links on the left side of the screen to help navigate to different data.

All users will see a set of “System Tags”

**System Tags**

- Favorites
- Dashboards
- Reports
- Templates
- Files
- External Reports

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Favorites include any report or dashboard that you as a user have identified as a “favorite.” You can select “favorites” when looking at a specific report or dashboard, or by clicking on the star icon next to any report or dashboard in your list.

Dashboards are a collection of reports arranged together. Dashboards can be useful for quickly scanning several tables of related data. Red icons indicate dashboards:

Templates are blank reports with no dimensions or measures added. They are indicated by a blue icon:

Files & External Reports are links to other web-based reports or static files uploaded into the data warehouse.

Reports are individual tables or charts. There are a large number of reports prepared by IEPR that are available in the Reports list. These have been designed to include the most relevant filters, dimensions, and measures specific to the purpose of the report. Reports are automatically updated each night and contain the most current data whenever they are opened. You will only see reports that have been shared with you. Because of the large volume of reports, most reports are grouped into “Institutional Tags.” These tags are similar to an electronic folder system. Reports are grouped into tags based on similar content or purpose (for example, reports used for Academic Department Review are grouped with a tag). Users will only see institution tags that include reports to which they have access. The report list can also be sorted by Name, Description, Created Date and Modified Date by clicking on the links as shown below:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Created Date</th>
<th>Modified Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Training - Student Classes</td>
<td>Blank report...</td>
<td>03/28/2014</td>
<td>03/28/2014</td>
</tr>
<tr>
<td>2. Training - Class Sections</td>
<td></td>
<td>03/28/2014</td>
<td>03/28/2014</td>
</tr>
</tbody>
</table>
Navigating within a Report

Within each report, you will see several links as well as a report title and possibly a report description.

- **Report Title**
- **Report Tag (if any)**
- **Report Description (if any)**

"Delete" removes the report from the warehouse completely.

"Share" allows users to specify who can see the report and their level of access.

"Save Changes" allows a user to save any changes made to the report. *This option is only available if the original report author has given you this level of access.

"Make my own copy" allows a user to save his/her own version of the report. The new report can be renamed and modified as desired without harming the original report. *This option is only available if the original report author has given you this level of access.

"Add as favorite" adds this report to the "Favorites" system tag.

"Switch to chart" allows a user to take any tabular report and turn it into a chart or graph. The graph can be modified similar to a graph in Excel.

"Expand Workspace" hides the report description and top links (this can be undone by clicking "shrink workspace").
Copying and Saving a Report
If you have security to copy and save reports so you can change the way it looks and add more add dimension, you can click on Make My Own Copy link.
To keep track of your report, it is a good idea to begin the name of your copy of the report with your complete initials (e.g., John Paul Doe should save the report beginning with JPD***). Add a description of the report and remember to click on the SAVE button under the Description box. (Leave the “switch to” and usage option defaults). You can modify your saved copy of the report but be sure click on Save Changes if you want to save your most recent modification(s). Note that your saved copy of the report is only accessible by you (unless you share it).

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Sharing a Report

If you decide to share a report with another data warehouse user, you must select the user and the level of access you would like that person to have. Sharing a report will only be available as an option for certain users and in certain reports where they have been granted permission to share. Most users will be able to share their own copies of reports. First click on the “share” link at the top of the report.

There are three options for the level of access to grant another user:

1. People who can view this report: This includes anyone who can only view the report. The user would not be able to save over the report or make his/her own copy of the report (they will not see the “Make my own copy” or “Save Changes” options).
2. People who can view and copy this report: This access allows another user to view your report and have the ability to make his/her own copy. This does not allow the user to save changes over your original report. For most uses, this is the recommended level of access.
3. People who can view, copy, tag and save changes to this report: This level of access allows another user the same permission you have on the report, including the ability to save over your original report. This can be useful for sharing with the Office of Institutional Effectiveness, Planning and Research to have a report reviewed.
Appendix:

Acceptable Use Statement for the Data Warehouse.

The data warehouse is provided to College of Lake County (CLC) personnel as a tool for strategic decision support, namely to assist the college in fulfilling its mission of student academic success, access to higher education, and service to the community. The use of the data warehouse is a revocable privilege. Any uses that might jeopardize the integrity of the college’s information and data management systems, might adversely affect the reputation of a student, might adversely affect the reputation of a member of the college staff or faculty, might breach the privacy or safety of any member of the campus community, or that might otherwise be illegal, will be cause for revoking privileges.

By using or accessing the data warehouse, users agree to comply with this acceptable use statement (AUS) and other applicable CLC policies, as well as all federal, state, and local laws and regulations, as amended.

Only authorized users are permitted to log onto the data warehouse. The term “user” refers to any instructor, administrator, staff member, contractor, student worker, intern, or temporary worker who is granted access to CLC’s data warehouse.

General Principles
General requirements for acceptable use of the data warehouse are based on the following principles:

1. Each user’s access privileges will, to the extent practical, align with each user’s privileges in People Soft, or other technologies.
2. Each user is aware of CLC’s policies and practices as well as state and federal laws that govern the privacy interests of students and personnel. Each user will remain aware of changes to those laws, policies and practices and comply with them.
3. Each user is expected to safeguard the rights, reputation, and reasonable privacy expectations of others who might be identified directly or indirectly by the user’s access to the warehouse.
4. Each user is aware of CLC’s policies and practices protecting the rights of students, or employees who may become subjects of a research project. Users who wish to present findings to audiences outside the college (i.e. for publication in scholarly journals or presentation to professional associations) first are required to receive approval of CLC’s Intuitional Review Board.
5. Data warehouse is a password-protected, computerized environment. Each user is expected to log off from his/her data warehouse account when it is not in use.
6. Each user understands that most data elements in the data warehouse are “live” and subject to change from day to day.
7. Users will consult with the office of Institutional Effectiveness, Planning and Research before using reports from the data warehouse to justify policy and planning proposals.
8. Users are expected to cooperate with CLC to investigate potential unauthorized and/or illegal use of the data warehouse.
9. Each user is expected to report any apparent errors in the data warehouse to the office of Institutional Effectiveness, Planning and Research.

Prohibitions:
A. Without limiting the general guidelines listed above, unless expressly agreed to by the executive director of Institutional Effectiveness Planning and Research, the following activities are prohibited:

   1. Sharing one’s log in credentials with any other individual or organization.
   2. Attempting to disguise one’s identity, the identity of one’s account or the machine that one is using when accessing the data warehouse.
   3. Breaching the privacy or confidentiality of others.
   4. Changing or deleting another user’s saved reports.
   5. Distributing or sending data from the data warehouse to anyone who is not permitted to see such data.
   6. Using any information retrieved from the data warehouse for stalking, spying, discrimination, intimidation, bullying, or harassment.
   7. Using the warehouse to distribute e-mail without proper authorization.
   8. Attempting to bypass network security mechanisms.
   9. Unauthorized use of the data warehouse for personal interests, private business, commercial or political activities, fundraising (unless directly aligned with CLC’s Foundation or Alumni Association), or advertising on behalf of non-college organizations, unlawful activities, or uses that violate other college policies.
10. Sharing data warehouse information with the public or any news media without approval of the executive director of Public Relations or the President.
11. CLC may monitor and investigate individual usage of the data warehouse, at its sole discretion, in order to enforce this AUS. CLC reserves the right to review and monitor any transmissions sent or received containing information generated in the data warehouse.
Penalties for abuse:
B. Penalties for violating this AUS may include:

1. restricted, suspended, or revoked access to the data warehouse
2. disciplinary actions in accord with CLC policy
3. civil and or criminal liability

Updates to the Acceptable Use Statement
The College of Lake County reserves the right to update or revise this AUS or implement additional policies in the future. Users are responsible for staying informed about CLC policies regarding the use of computer and network resources and complying with all applicable policies. CLC shall provide notice of any such modifications or amendments by email to the warehouse users group. Any such modification shall be effective immediately upon notice being provided regardless of whether subscriber actually reads such notice.