Enrollment Cube EDW

Overview

The ARGOS OLAP (On-Line Analytic Processing) Cube is used to manipulate and present elements, such as Banner's Enrollment data, in a format that is easily understood. The data is stored in the Electronic Data Warehouse (EDW).

The Cube provides:

- flexibility in the extraction of data and then allows the end user to use common elements to sort, filter, arrange and analyze the data.
- advanced capabilities, allowing the end user to select multiple dimensions and available measures to perform complex calculations and analysis.
- an Export utility; once the data is in an acceptable format, you can export it to Excel or graphically compile and then export or print, as needed.

ARGOS OLAP Cube

ARGOS OLAP Cube is pictured below. The top section is used to enter Filters/ Parameters; the remaining area is used to manipulate and display data. In order to use the "Cube" effectively, it will be helpful to understand some of the basic terms associated with it. The terms are listed below and shown on the screen that follows. Definitions are provided on the following page.

- Required Parameters
- Available Dimensions
- Column Dimensions
- Row Dimensions
- Measures

Filters/Parameters: A filter is defined as a parameter offered to the user to exclude unwanted data in the cube. It reduces the amount of data, which in turn allows the underlying database to take advantage of existing indexes to speed the retrieval and collection of data.

Available Dimensions: Data categories that can be dragged to either the Column or Row dimension area. Users can click on the down arrow to filter, sort or enable forecasting of the dimension.

Column Dimensions: One or more dimensions selected by the user to be displayed as columns in the cube. Multiple dimensions are nested and clicking the "+" in the work area will expand the columns to display the additional dimensions.

Row Dimensions: Dimensions selected by the user to be displayed as rows. Like Column Dimensions, multiples can be selected and configured, and viewed by clicking the "+" in the work area.

Measures: Calculations made using the selected parameters and dimensions. Users can modify measures or build custom measures by clicking the arrow to retrieve the Measure Manager. Measures can be calculated using value, percent, ranks, running totals, sum, etc. and can be filtered and formatted.

Getting Started

Navigation

- Access and logon to ARGOS using the following URL: http://sis.siu.edu/ then, locate **LOGIN QUICKLINKS** and select **Argos**.

- From the **Explorer Tab**, drill down to the Enrollment Cube (EDW) datablock using the following navigation path:
  - **Banner→Historical Summary Reports→ Enrollment→Enrollment Cube (EDW)**.

- The Enrollment Cube (EDW) information and **Report Viewer Actions** will display.

- Click **Run Dashboard** in the **Report View Actions** section to begin.
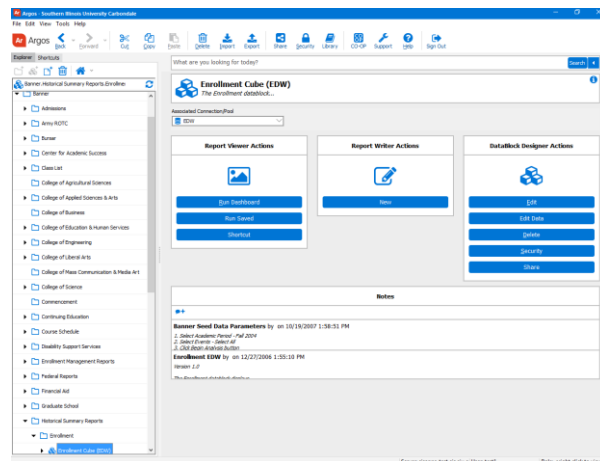
Executing "Enrollment Cube (EDW)

- The **"Executing "Enrollment Cube (EDW)"** window opens.

Parameters

- To retrieve data, select Parameters.

- **Term** - click on a **Term** to select it. Use the Shift key to select one or more in sequence and CTRL Shift to select different ones individually.
  - Depending on the configuration of your PC, this may appear as a picklist with a drop-down arrow.
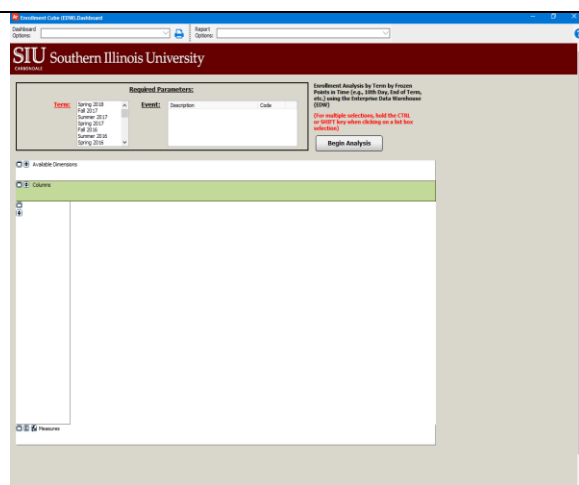
- **Event** - select an Event.
  - The list of Events begins 22 weeks before classes; as the semester progresses, the Events list will increase.

- Click **Begin Analysis.**
  - In a few seconds the Enrollment Data, containing registered student counts, will display in the Cube.

Using Dimensions

- Once you have accessed the Executing "Enrollment Cube (EDW)", selected Parameters, and displayed "registered count" data in the Cube area of the window, you can begin to manipulate the "Cube".

- This section of the document introduces you to various components of the "Cube"; as well as "Available Dimensions", how to access and use these to manipulate the data.

Cube Components

- The cube components are:
  - **Available Dimensions** - There are 28 Available Dimensions displayed at the top of the "Cube".
    - A scroll bar is available to view the entire set.
  - **Column Dimensions** - located in the area with the green background. Defaults are:
    - **Stud. Pop.**
    - **Term**
  - **Row Dimensions** – located directly below the Column Dimensions, in the white area to the left of the data.
    - **Stud. Class. BOAP** is the default. (BOAP is the acronym for Beginning of Academic Period; so, STUD. CLASS BOAP is the classification [Freshman, Sophomore, Junior, etc.] of the student at the beginning of the term.)
  - **Measures** - below the Data is the **Measures** Area. Measures will be addressed in another section of this document.

Work Area

- The Work Area is located in the first column of the "Cube".

- This area contains elements used to modify the data.

- On the right, the Work Area has been enlarged.

- Two icons are available:
  - **Map Building** icon, resembling a **Cube** is used to build maps.
  - **Measure Manager** icon, resembling a **Ruler**, is used to modify the existing Measures or build custom Measures.

- **Column Dimension Titles** for the default Column Dimension(s) are located in the first cell of the Work Area.
  - Stud. Pop.
  - Term (not shown)

- When additional Column Dimensions are used but not shown, a **Plus** icon will appear in the left corner of the cell. If you click it,
  - Icon toggles to **Minus** and additional Column Dimensions are shown.
  - Continue to click the Plus icon to expand and show all Column Dimensions.
  - Click again, to collapse and return to Plus.
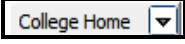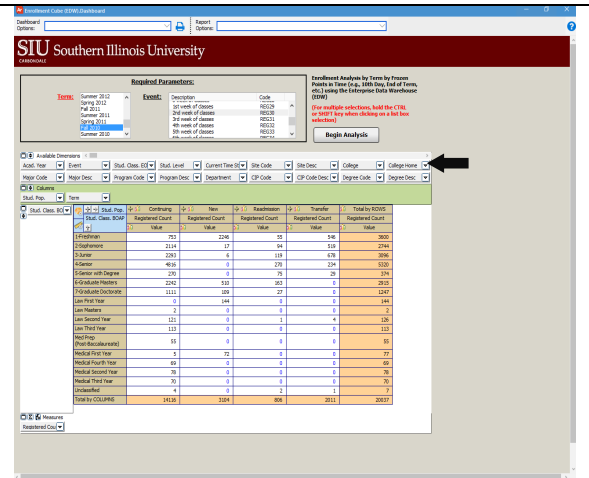
- Click the **Right Arrow** button in the cell to reverse the column order.

- **Row Dimension Title(s)** are listed in the second cell of the work area; in this example: Stud. Class. BOAP

- **Up** and **Down Arrows** appear in the Row Dimension cell.
  - These are used to switch the Row data in **Ascending** and **Descending** order, respectively.
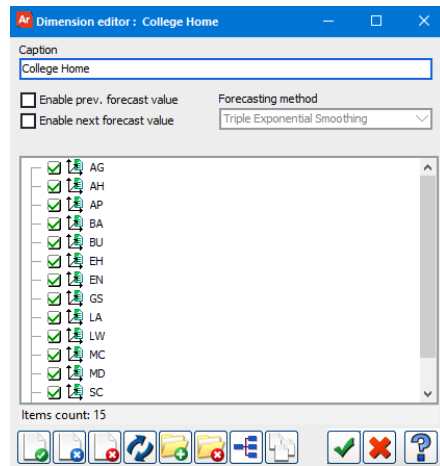
Edit a Dimension

- In this section, you will learn how to add a Dimension to view the data from another perspective.

- To add an "Available Dimension", click on the **Down Arrow** `College Home ▼`, in the cell to the right of the **Dimension Title**.
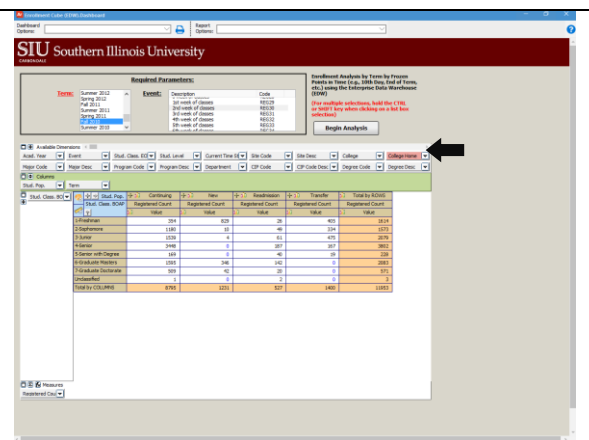
- The **Dimension editor** window opens.
  - Forecasting options are available.
  - The main area of the Dimension editor contains the Dimension values.

- Click the checkbox to the left of each dimension value to change the status.
  - The ✓ **green check** in front of each dimension value marks it "visible".
  - A ☒ **blue X**, the value status is "invisible"; the value is not computed in the measures but is displayed.
  - A ☒ **red X**, indicates the value status is "filtered". A filtered value is not computed in the measures and is not displayed.

- To set all Dimensions to one status, use the corresponding buttons at the bottom of the window.
  - Click [icon] to set All to Visible
  - Click [icon] to set All to Invisible, or
  - Click [icon] to set All to Filtered.

- When edits are complete, click [icon] to **Accept** changes; [icon] to **Cancel** changes.

- The data in the "Cube" is updated immediately.

- The cell background color of an edited Dimension will change colors based on the settings.
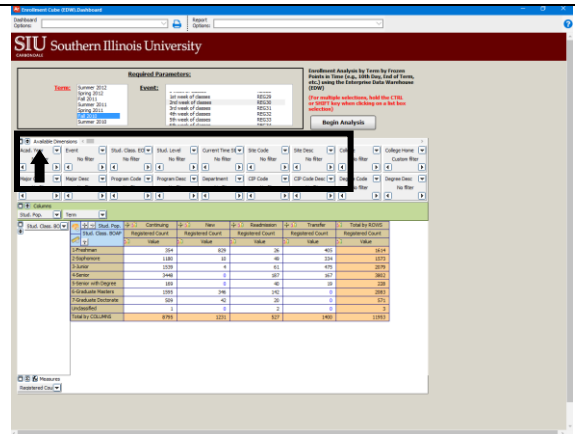
Keeping Track of Dimensions

- When several Dimension edits are made, it may be challenging to keep track of those edits. This section provides some tips to help with the task.

- To view filters or other edits, click the ⬍ **Double-arrow** in the Available Dimensions area to **expand** all Dimension cells.
    – Expanded Available Dimensions are shown on the right.
    – Click the Double-Arrow again to **collapse**.

Remember: The background color in a cell for an edited Dimension will change colors based on the settings.

Tip: To see the entire set of Available Dimensions, use the **Horizontal Scroll Bar**.

IMPORTANT: When you add a Dimension to manipulate the data, your changes remain until you end the session; or, until you undo the change. If you choose to remove an added Dimension, just reverse the steps using the Dimension editor.
- Locate the edited Dimension and click the Down Arrow to open the Dimension editor.
- Select individual checkboxes or use the All Set buttons at the bottom of the window to reset the default values.

- Click [✓] to Accept the changes.
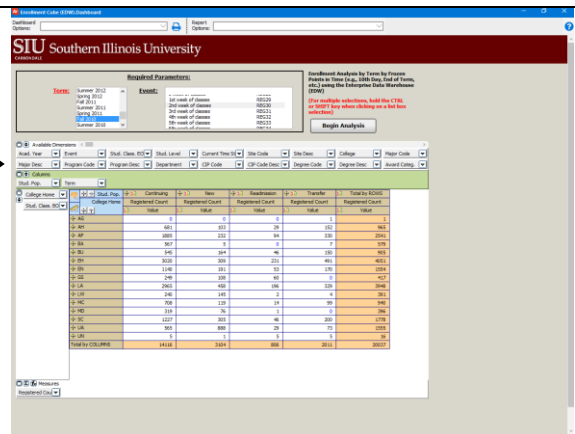
Multiple Dimensions

When parameters are entered and the data is retrieved, the data you are viewing is based on the default Column and Row Dimensions. Aside from adding a Dimension, as just shown, you can also manipulate the views using different Column and Row Dimensions. In this section, you are given instructions to add and remove default dimensions.

- Default Column and Row Dimensions are preset in the Enrollment "Cube".

- You can add "Available Dimensions" and remove the default Column and/or Row Dimensions to get the desired results.

Add a Dimension

- To add a Row or Column Dimension:
    – locate it in the set of Available Dimensions;
    – click to select;
    – and then, drag and drop it in the Row or Column Dimension area of the Cube.

- Watch your cursor as you drag the Dimension. An arrow will appear indicating direction for placement of the Dimension.

- The data in the "Cube" is updated immediately.

Note: College Home was added as a Row Dimension in this example. *College Home is the home college of the student and the student's associated major.*

- Dragging a Dimension from the set to a Row or Column Dimension Area of the "Cube" will not affect the way the Dimension is edited. To edit:
    – Select the Dimension's Down Arrow;
    – And, then use the Dimension editor window to make changes e.g. Visible, Invisible, and Filtered.

Remove Default Dimensions

- To remove the current default Column Dimensions:
  - click to select;
  - drag to the set of "Available Dimensions";
  - and drop at the preferred location.
    - Use the cursor and the direction arrows to place the Dimension in a specific location.

- In this example *Stud. Pop and Term* have been removed and College is now the Column Dimension.
  - *College represents the academic unit for undergraduate students; Graduate School for graduate students.*

- The "Cube" will immediately reflect your manipulations.

- Click the Plus (+) icons in the Work Area to expand and view the results of your additions or removals.

Measures

- As noted, "Available Dimensions" have been used to group numeric items and manipulate the "Cube".

- **Measures** are numeric items that you want to count, sum, and average. The Dimensions allowed you to break down the "Measures" in any way you like to manipulate the "Cube".

- In this section, we'll review several windows associated with Measures.
  - **Measure Manager** window - lists all Measures available and allows you to "enable" or "disable", as needed.
  - **Calculated Measure Manager** window - used to add new measures.
  - Enabled **Measure Manager** window – specific to the enabled Measure. Used to add "Visible" and "Filtered" attributes.

Measures Area

- Available "Measures" are located at the bottom of the "Cube" (outlined in red on the right).
  - The "Cube" has the capacity for 20+ measures for analysis.

- The default Measure for the Enrollment "Cube" is "**Registered Count**".

- To modify how "Measures" are viewed, use the Control Buttons found in the top left corner.
  - Clicking ⬜ collapses the Measures area.
  - Clicking the "Sum" icon 𝚺 opens the **Measure manager** window.
  - Clicking 𝐟𝐱 opens the **Calculated measures manager** window.

Measure Manager

- The first Measure window introduced is **Measure manager**.

- Use one of two ways to access this window.
  - Click the "Sum" icon [Σ] control button in the Measures area;
  - Or, click the **Ruler** icon in the Work Area of the Cube.

- The available Measures are listed on the left side of this window.
  - A Green Check marks a Measure, "Enabled". *"Registered Count" is enabled by default*.
  - A Red X marks a Measure, "Disabled". *"Total Credits Generated" is disabled by default.*

- If necessary, click the respective checkbox to Enable or Disable an individual measure.

- Use the buttons at the bottom of this window, as follows:
  - Click [icon] to set All to Enabled.
  - Click [icon] to set All to Disabled.
  - Click [icon] to toggle the "Measure" state, between enabled and disabled.
  - Click [icon] to Expand and Collapse tree nodes.
  - Click [icon] to create, edit or delete calculated measures using the Calculated measures manager window.
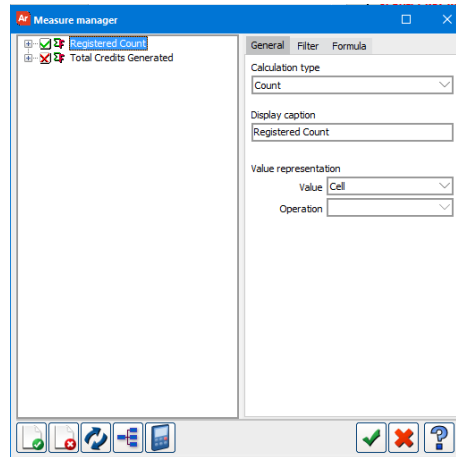
IMPORTANT: At least one measure must always be enabled, in the Cube.

- When a specific Measure is highlighted, e.g. *Registered Count*, then applicable Measure options are activated and categorized in the three tabs on the right.
  - **General** tab – provides the **Calculation Type** and allows you to change it, if necessary. The **Display caption** is defined, as well as the **Value representation**, which can be changed, if desired.
  - **Filter** tab - is used to enable and set Min. and Max values for Filter by Map cells or by Fact table records.
  - **Formula** tab - gives users access to the Build format button, allowing them to set measure formatting options.

- After making changes to a Measure:
  - Click [icon] to Accept changes and view the results; or, click [icon] to Cancel.
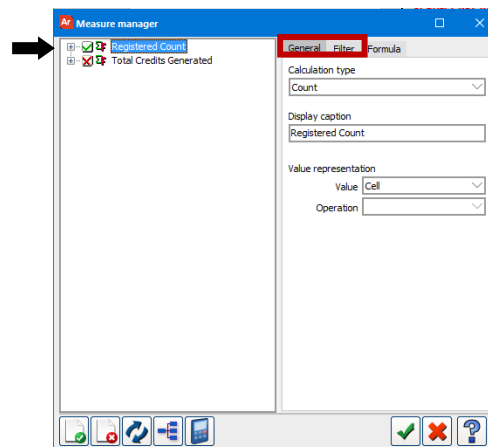
Calculated measures manager

- To access the Calculated measures manager:
  - Click in the Measures area of the "Cube".
  - Or, click from the Measures manager.

- This manager window is used to create, edit or delete calculated measures in the "Cube".

- Calculated measures are expressions that have one or more selected measures.

- To create a new measure, Click the **Add new measure** button - dialogue box opens.
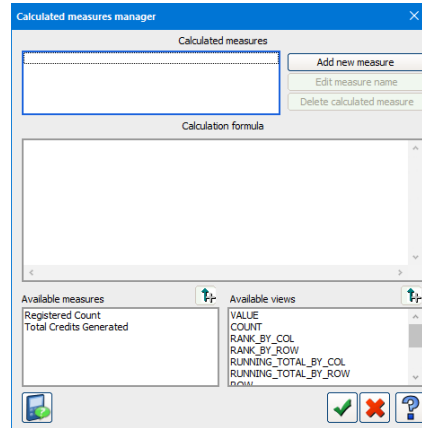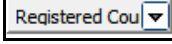
- Enter a **Name** for the measure.

- **C**lick **Accept** to close the dialogue box.
  - **Name** appears in Calculated measures box at the top of the window.
  - Simultaneously, **Edit measure name** and **Delete calculated measure** buttons are activated.
  - **Calculation formula** is started for you.

- To build the **Calculated formula**, use one of the following methods.
  - Click in the Calculated formula area and edit the formula directly;
  - Or, click on the **Available measures** and/or **Available views** listed at the bottom of this window to select and add to the formula, as desired.

- Click Accept to complete the process.

IMPORTANT: Calculated measures exist only for the session. You will have to re-create these for future use.

- If later you decide to Rename a calculated measure, click to highlight it, and then click the **Edit measure name** button and enter the name change in the dialogue box; click Accept. Repeat this action to close the window.

- To Remove a calculated measure, select the Name from the Calculated measures area; click **Delete calculated measure** button. Click Accept to close the Calculated measures manager window.

Measure manager: Registered Count

- Click the Down Arrow to open the Measure manager for that specific Measure.
  - The **Measure manager for Registered Count** is shown on the right.

- To set an attribute for the specific Measure to "Visible", click the respective checkbox to display a Green Check Mark.

- To set an attribute to "filtered", click the respective checkbox to display the Red X.
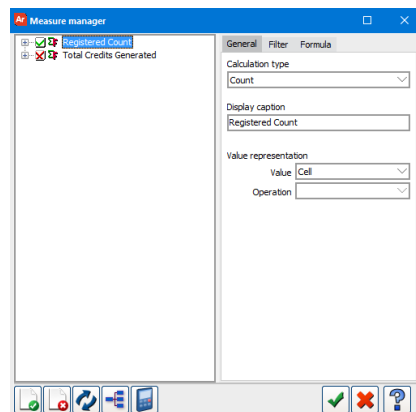
NOTE: The "Dimension" manager window allowed you to make "all" attributes visible, invisible, or filtered. For "Measures" you only have two options, visible or filtered and these changes must be made manually. There are no "All" buttons at the bottom of this window.

RECALL... we stressed that edits to Dimensions remain during a session unless you undo them. The same is true for Measures. Changes will remain active until you end the session or undo your changes.

Export and Chart

- The Cube provides several ways to export and chart the manipulated results.
  - Export the data to an Excel spreadsheet, then apply Excel formatting and use Excel's output functions, Save and/or Print the results.
  - Or, use the functionality provided by the Cube to create a chart. A chart is created using the icon that resembles a bar chart located in the corner of a cell for a Row or Column Dimension. Minor customizations can be applied to the chart and it can then be printed immediately.

Export to an Excel Spreadsheet

- **Right Click** in the main area of the "Cube".

- A picklist displays; select **Export to Excel (OLE)**.

- The Enrollment Cube appears and the **Excel** icon will blink in your Task tray; click on it.
  - Depending on your computer configurations, the Excel spreadsheet may open automatically.

- The Enrollment data has been exported to an Excel spreadsheet.

- Use Excel's functions to print or save the data.

- To return to the Enrollment "Cube", close Excel.
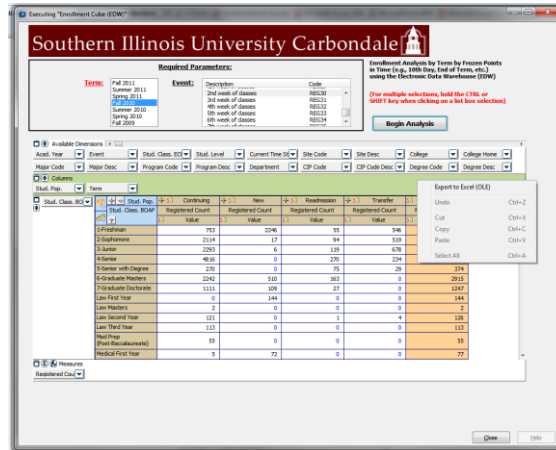
Chart the Cube Data

- To Chart data, click the Bar Chart icon in the left corner of the desired Dimension.
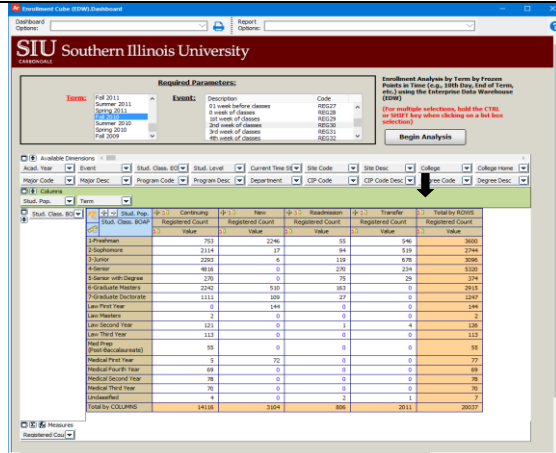
- A Chart editor window.

- The left panel contains options to modify the Chart and the respective legend (displayed on the right).

- You can Print this chart, as is; or, make minor changes from this window.

- In the left panel, use the Right Arrow to expand a list of available values for the Dimension.
  - Your chart can include All Dimension values or you can select specific ones by pressing the Ctrl key as you click.
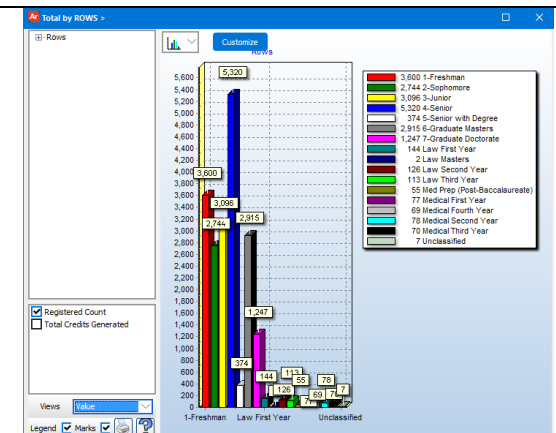
- Other options that you can change are:

- – **Enabled Measure**, located just below the Dimension values on the Left Panel, represented by checkboxes.
  - – **Views** – located near the bottom of the panel; click the Down Arrow to access a picklist and change the View, as desired.
  - – **Legend** and **Marks** check boxes – located at the bottom of the panel. These are checked by default; uncheck if not needed.

- The Printer icon is also at the bottom of the panel. Click it to Print the Chart using your default Printer.

- If a different Chart is needed, click the Down Arrow above the Chart; choose from the pre-defined list of Chart Types.

- Click the **Customize** button to access the Advanced Chart Editor and apply advanced settings for final output.

Advanced Chart Editor

- This section provides instructions to apply advanced editing options; such as, edit the Axes and Legend, apply text formatting options, and choose a different Theme. Instructions to copy and paste the Chart in to another application will also be provided, as well as how to export and print the Chart from the Advanced Editor Window.

Note: This section is a continuation of the previous one; the same Bar Chart will be used to document features associated with the Advanced Chart Editor.

Chart Editor Window

Select Specific Dimension Values

- You can use the Chart Editor window to select specific Dimension values to chart, if desired.

- To begin, click the right arrow in front of the Dimension in the left panel.
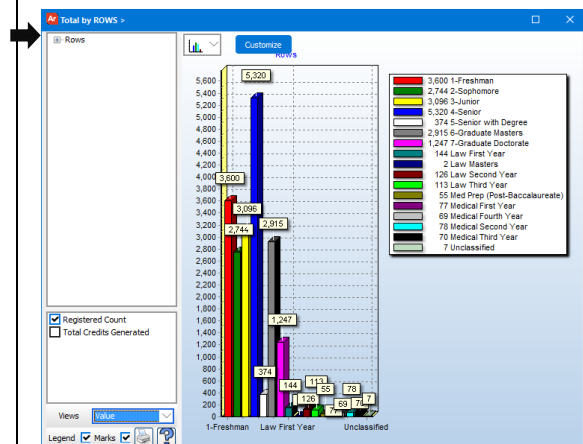
- The list expands to show all Dimension Values.

- Hold down the Ctrl key on your keyboard and click on the Value needed.

- Continue to hold down the Ctrl key until you've selected all the values you want.

- The Chart updates as you make your selections; the Legend also updates as the changes are made.

- The Chart Title changes automatically, based on our selections.

- You can use the Advanced Chart Editor to make additional changes.
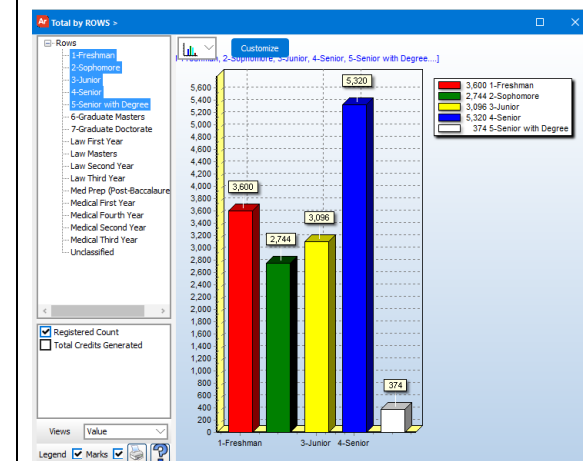
Editing Chart Window

- To access the Advanced Chart Editor, click the **Customize** button above the Chart.
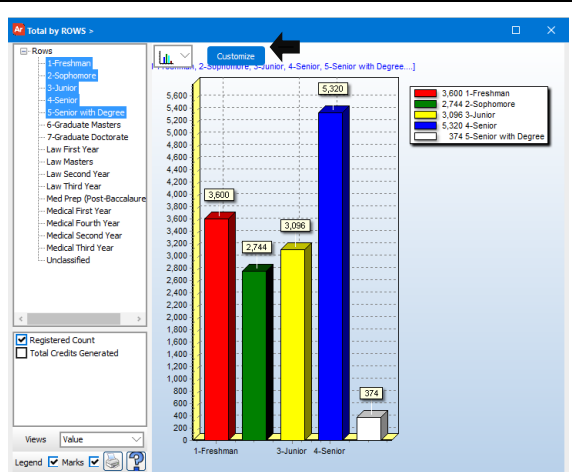
- The **Editing Chart** window opens; it provides numerous options that you can apply to the Chart.

- A few of these are detailed below.

Series Options

- The left panel is expanded to the first level by default.
  - **Series/Registered Count** is displayed by default.

- You can use this area of the window to edit the Chart Type.

- A list of buttons is available on the right.
  - Use the **Add** button to create a new Series.
  - Use the **Delete** button to remove one.
  - Use the **Clone** button to make a copy of the selected Series.
  - Clicking **Change** opens the TeeChart Gallery for other design selections.
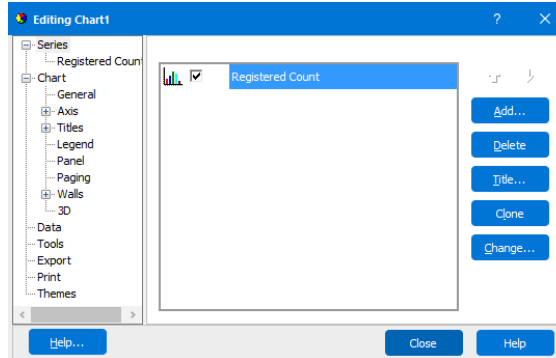
Chart Options

- To continue, we'll look at the Advanced Chart editing options, listed on the left panel.

- Clicking **Chart** displays all the applicable editing options listed in the Left Panel; they are in a tabbed format, in the Editing Chart window.

- Only the tabs relative to the option are shown.

- Here, the General tab is opened by default.

- The second row of Tabs shows the options available for General e.g. Zoom.
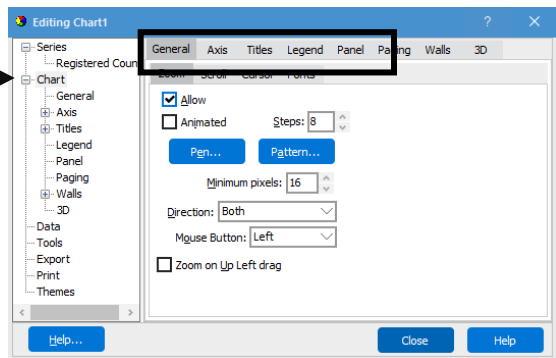
- Listed below are the Chart options and uses.

- General – provides options relative to Zoom, Scroll, and Cursor, as well as Fonts. For example, click the Fonts tab to make changes to text in several areas of the Chart e.g. change the Font size for the Titles.
- Axis – allows you to select an Axis from a picklist and apply edits using the available options.
- Titles – displays the Chart Titles in the "Text" area. Use the row of Tabs to add the preferred attributes. If needed, use the Down Arrow to add other titles, e.g. a SubTitle.
- Legend - similar to the Title, numerous options are available to modify the appearance of the Legend.
- Panel - options are available for you to add color, a border or other attributes to the Panel.
- Paging - is available to set Paging options, if needed.
- Walls - are set to Visible by default. You can choose to make them Invisible. Or, modify each Wall, using the options provided.
- 3D – these settings can be customized according to your preferences.

- For example, to change the Chart Title:
  - Click **Titles**.
  - Click in the Text area and make changes directly to the text;
  - Or, use the Edit button and make changes from the Editor window.
  - If Edit button is used, the Text Editor window displays.
    - Delete the text and type a new Title.
    - Additional options at the bottom of this window allow you to **Copy** text to another source, **Load** or import text from another source, or **Save** the text to another source.
    - Click OK when finished.
  - The new Title is displayed in the Text area.
  - To add further customizations, use the available Tabs; Text Tab formatting options common to most applications are available.
  - Changes are applied immediately.

Data Options

- Clicking **Data** opens a window that allows you to view the Dimension data, as defined by the Chart.
  - Buttons at the bottom of the window allow you to toggle views to include or exclude Labels, Color or X Values.
  - You can also Copy the Values into other applications.

Tools Options

- Clicking **Tools** opens a blank screen; click the **Add** button.
  - The Chart Tools Gallery becomes available.
  - Click the **Add** button to apply an option to the Chart; click **Cancel** to close without adding Tool options.

Export Options

- Once the desired options have been applied to the Chart, you can Export the edited Chart.

- Click **Export** and select your preferred method of output.
  - Click the **Copy** button to copy the chart in to another application.
    - Then, open another application such as Word or Excel and use that application's Paste function to paste the Chart in to it.
  - Click the **Save** button to save to the Chart after editing.
  - Clicking **Send** saves the chart as an attachment (.bmp, etc.) and allows email to be sent with the chart attached.

Print Options

- Clicking **Print**. . . opens a Print dialogue window which allows you to choose print options based on your default printer.

Themes Options

- When **Themes** is clicked, a list of available Themes that you can apply to the Chart is shown.

- When a Theme is selected from the list, a Preview is shown on the right side of the window.
    - If acceptable, click the **Apply** button at the bottom of the window.
    - If none of the options are applicable, click the **Current** Theme option to keep the Chart as is.

Closing the Editing Chart

- Once all Edits are complete, click **Close** to exit the Editing Chart window.
    - Displays the Chart Editor.

- Click the **Window Control "X**" to close the Chart Editor window.

IMPORTANT: When you close the Editing Chart or Chart Editor window, all Edits to the Chart will be lost. Therefore, you must save or export during the customization process, using the Exporting, Printing or Saving options above.

Exiting the Cube

- To exit the Executing "Enrollment Cube (EDW), click the **Close** button at the bottom of this window.

- To end the session, click the **Logout** button.