

ilios

Curriculum Management for the Health Professions



# The Ilios Users Guide

v.2.4 release

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## General Information

### ***When working with Ilios...***

a few basics to be aware of:


#### *Ilios is a web application*

This application is web-based, and is accessed through web-browsing interfaces. While it may be used on any current web browser including Internet Explorer 8 and above, Ilios is optimized for use with Mozilla's Firefox web browser 18 and above, as well as all webkit-based web browsers such as Google Chrome (ver. 30.x and above) Safari (for Mac), or Opera (ver. 10.x and above) Older versions of Internet Explorer are not recommended.

#### *Avoid using the browser back button*


In order to stay within your current state of work use the internal application navigation buttons to navigate within the application instead of the browser back/forward button controls. From within the browser window, Ilios is dynamically compiling information from the database and modifying it according to user input; the state of information is in flux until the "save" or "done" command is used. If you use the browser back button you might **lose** work!

#### *Saving work*

Work processed in Ilios is presented and collected in real time, but only saved to the system when a "save" or "done" button is selected. When there is work that is unsaved, the save, publish, or done buttons available for that work will become active, and the section header in which you are working will show the "unsaved state" colors: . Navigation away without saving your work will cause an alert to appear. Once you have saved your work, you may safely navigate to a different module in the application.

#### *Collapsible containers*

Ilios is designed to provide as much information in a single display page as possible and many of the on-screen information "containers" are collapsible. For top level information containers - programs,

courses, and cohorts - the control to expand or collapse the information looks like this:  Other primary containers like Groups, Sessions, etc, the tool allowing for the collapse and expansion of the container are plus and minus signs found in the upper right corner of the container. It looks like this: +/- For elements *within* those containers --- lists and other attributes ---- the collapsing control is a

small arrow on the left which look like this: 

#### *Optimal viewing*

Your primary view is that of an editor and content creator. In order to facilitate this complex view, the system currently works best on a high-resolution display monitor. Other views such as Learner views, and other non-content creation views, are usable at lower resolution.

#### *Course calendar*

Ilios is built explicitly on the concept of user-centric information, rather than course-centric information. What this means is that the default view for a user entering the system is not an individual course, but the aggregate of all courses with which they are associated. As a course developer/ director, the calendar of a single course can easily be accessed via the course and session management tools.

## ***Ilios Workflow***

The Ilios workflow is based on a curriculum structure which incorporates several interconnected levels:

### ***SCHOOL/INSTITUTION***

***Program → Course → Session → Offering → Calendar***

- A deployment of Ilios may include multiple related schools or institutions.
- Every school or institution creates and owns specific programs of study.
  - Each program is divided into specific academic years.
- Each course managed is associated with a specific program or programs, via those years.
- Each course is made up of a number of sessions, or units.
- Each session or unit is “offered” at a specific time and location, or given a specific due date. These “offerings” are expressed as items on the calendar display, which provides access to detail information for users of the system.

### ***Some of the terms currently used with Ilios***

***Cohort:*** A group of learners identified with the same graduating year, and thus having the same set of curricular, or graduation, requirements upon matriculation. Cohorts are usually identified by school/program and graduation year: “SOM Class of 2012.” Within Ilios, the Cohort is the key associating factor between individuals (Instructors, Learners) and Courses, as well as defining the particular “Level” or “Levels” of a Course.

***Competencies:*** A controlled vocabulary of school-specific educational domains of knowledge. Competencies may be divided into sub-domains, and may be mapped to objectives within a curriculum. Competencies are loaded into the system at implementation.

***Course:*** A Curriculum object that defines the content and structure of a specific instance of coursework available to the school or program.

***Curriculum Object:*** A Program, Course, Session, or Offering.

***Designation:*** a subgroup within a larger Learner Group often referred to by a name (Blue group/team) or number (group 1, group 2b). May be made up of both individual person objects and other subgroups.

***Discipline:*** Deprecated. Please see “Topics”.

***Draft:*** An object (session, course, learning material) which is not finalized and does not display in detail on the public calendars or to learners. Users with edit privileges may see, edit, and modify draft work. The other state available for objects is *Published*.

***Enrollment:*** The entry of a Learner into a specific Program or Course.

***Group:*** A collection of people (learners or instructors) which can be associated with sessions.

***Group Attributes:*** Assigned metadata for a given Group. These labels do not create hierarchical associations or relationships with other objects or data in the system. *Group Name* and *Default Room* are examples of this.

***Group Content:*** Data related and/or associated with a given Group that also exist independently within the system. *Person Objects* are an example of this.

**Independent Learning Unit/ Independent Learning Module:** A Session for a Course without a specific location or time of occurrence. Independent Learning Units are comprised of Learning Materials, an expected number of educational hours or duration for the learner to complete the content, and a due-by date. Also referred to as ILMs.

**Learning Materials:** Digital assets (such as files) and information (such as citations and web links) which may be associated with curricular objects.

**Learning Objectives:** Free-text entry fields of the desired learning outcomes for Programs, Courses, and Sessions. Learning Objective may be associated with competencies.

**Level:** Point in educational time / progress within a given program for an individual or cohort of individuals. Represented as an attribute of *Course*.

**MeSH: Medical Subject Headings,** a controlled vocabulary that may be associated with curriculum objects and learning materials.

**Objective:** The specific educational objective(s) for a given curricular object. These may be general Program level objectives (also referred to as graduation requirements), Course level learning objectives, or Session level teaching objectives.

**Offering:** The scheduled (time and place) representation of a Session or teaching unit, represented on the calendar: in other words, when the curriculum for a particular session is “offered”.

**Person Object:** The record of an individual who can be assigned to an object within the system. Learners and Instructors are two types of Person Objects.

**Program:** A specific course of study for a given school.

**Publish:** The final, accessible version of curricular material that is delivered to learners and made available for public access via such interfaces as a calendar or search.

**Session:** A section or unit of a course with specific attributes of type and content. Sessions may be represented as multiple time and place “Offerings,” or as *Independent Learning* units with an estimated duration of educational time.

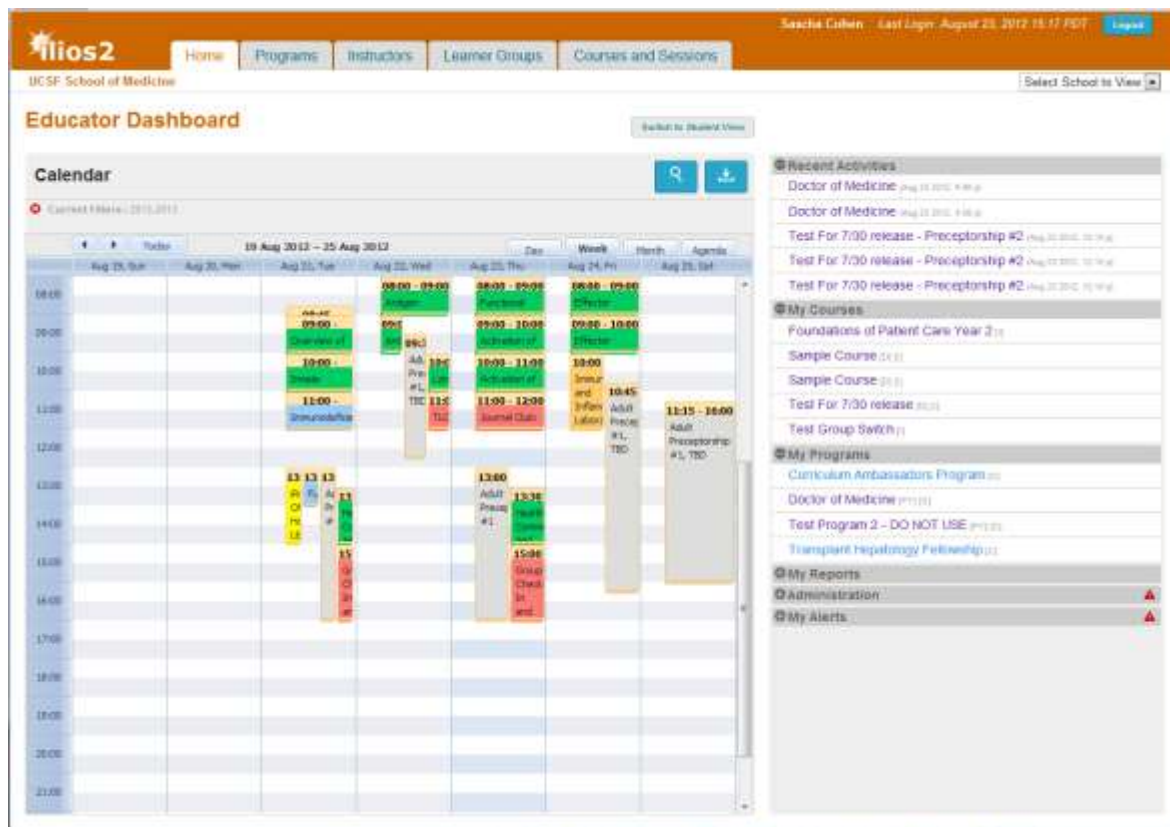
**Topic:** A controlled vocabulary of (school-specific) categories of learning. Topics are loaded into the system at implementation. Previously known as “Disciplines”

## Logging In

Ilios allows for either native or enterprise authentication. If your institution uses shibboleth authentication, Ilios provides configuration for this. If not, you may either modify the configuration of the authentication files to meet the needs of your system, or implement the native Ilios username/password authentication system.

## Dashboard

Once you are logged in, if you are a user with editing privileges, you will be presented with the “Dashboard” Landing page.



The Dashboard is designed to provide quick access to common sets of information and simple task and activity tracking. It is made up of the primary calendar view, and a number of functional modules to enhance use of the system.

Currently active modules are:

- the *Recent Activity* list (showing the location of your most recent user activity in the system, and time stamps for that activity);
- the *My Courses* list (displaying all the courses with which your name is associated in Ilios);
- the *My Programs* list (displaying all programs with which your name is associated in Ilios);
- the *My Reports* list (allowing for the generation and display of certain basic list-type reports); and
- the *My Alerts* list (displaying customized personal reminders).

For course directors and administrative users with correct privileges, there is also the *Administration* module, providing access to the Management Console and the ability to activate archiving and course rollover.

### Calendar View:

The center of the display is a view of the Ilios calendar, defaulting to a display of all items in Ilios with which you are directly associated. If you are a user with both student and non-student roles, the calendar will currently display your associated activities according to which role you are currently using to view the calendar; it will not show both sessions in which you are enrolled as a learner, AND sessions to which you are assigned as an instructor/director. For users who work with multiple roles, a toggle is provided to switch between these calendar views.

Clicking on any event in the calendar will bring up the detail viewing panel for that specific offering of the session. Clicking on any linked event listed in the sortable box below the calendar will jump the calendar display to the date of that event.



*iCal Download.* This button is available to users accessing Ilios directly. Beginning with version 2.4, it is no longer available to the embedded calendar view for moodle/external LMS applications. It provides a direct download of the user's calendar in the current displayed mode (if viewing the student calendar, then that will be downloaded; if viewing the instructor role calendar, then that will be the download received.) The download is in .ics standard format, to allow easy import into Outlook, iCal, Google Calendar, and other standard calendar and scheduling systems.

The download by default provides a time window beginning five days prior to the current day, and extending for sixty days into the future.

**NOTE:** *Beginning with version 2.4, Ilios will provide users with synchronized calendar access, via URL (see below). This will allow real time embedding and synchronization of a user's Ilios calendar with mobile appliance calendars, google calendar, and any other web-enabled calendar system which allows external calendars to be added via URL.*



*Generating a feed URL.* To connect your calendar application with Ilios, you will need a unique URL that you can copy and paste into the application. To get one, log into Ilios and click the calendar feed button. The button has an icon of arcs emanating from a dot (.), just above the right side of the calendar itself. A window will appear, including a URL that looks something like "https://your-ilios-server/ilios.php/calendar\_exporter/api/...". Copy that URL into your selected calendar application. For more information, please see

<https://wiki.library.ucsf.edu/display/DevUCSF/Ilios+Calendar+Feed+API>

**NOTE:** The URL generated for this is like a password. Anyone who knows it can view your calendar! Keep it safe. If you are ever concerned that someone knows your feed URL, you can change it by pressing the 'Generate' button under where the URL appears. If you generate a new URL, you will have to update any applications you configured with an old URL.

#### *A Note on Security*

The assignment of a secure URL with encrypted token for access to your calendar is similar to the methods in practice with other online calendars such as Google Calendar. As noted above, you should treat the URL as you would a password.

The ability to access specific learning materials via the calendar feed uses a similar system. A unique and encrypted token or "pseudo-key" is created for each available item within your calendar feed, which allows you to directly access that file. This is a similar mechanism to that used by tools such as Google Drive, Dropbox, Box, and other cloud storage systems. The encrypted pseudo-key for a learning material or file may only be accessed via the secure calendar feed, which in turn may only be generated from within the secure access login of Ilios. Like any such token, and like the feed URL itself, this link to the learning materials is again like a password - it should not be shared indiscriminately. The providing of file access to the calendar feed follows the same business rules as Ilios in general. But as with any materials provided to users, once downloaded or shared, it is up to the user to protect that material from misuse.

**\*\*Protected information (eg. PII, ePHI etc.) Should not be stored in Ilios.\*\***

In the initial iteration of this feature, there is no interface for removing, regenerating, or reviewing the pseudo-key for learning materials. This key is stored in the learning\_material table, as the value `token`. Removing this value from a record in the database will make it inaccessible for download

from the feed. Currently this may be done by request to the Ilios technical support team. Unless it is certain that materials should **\*\*NOT\*\*** be accessible to students, this is not recommended.



**Calendar Search/Filter.** This button is available to all users in all modes of view. It provides the ability to review and filter the curriculum that has been published to the calendar in a number of different ways.

By activating the search panel a user has access to a variety of search modes and filters. Search is currently constrained to a single School (the school to which the user has currently logged in) and a single Academic Year. Search may also be further defined by choosing between the two radio selections at the bottom of the search panel: *show all activities for selection* will search and display results from the entire curriculum of the given school and academic year; *show my schedule only* will display only those results which are available within the user's current schedule.



### Search By Course

Allows the user to search and display all the activities for any course in the selected academic year and school. That course selection may be further filtered for specific session types.





### Search By Topic

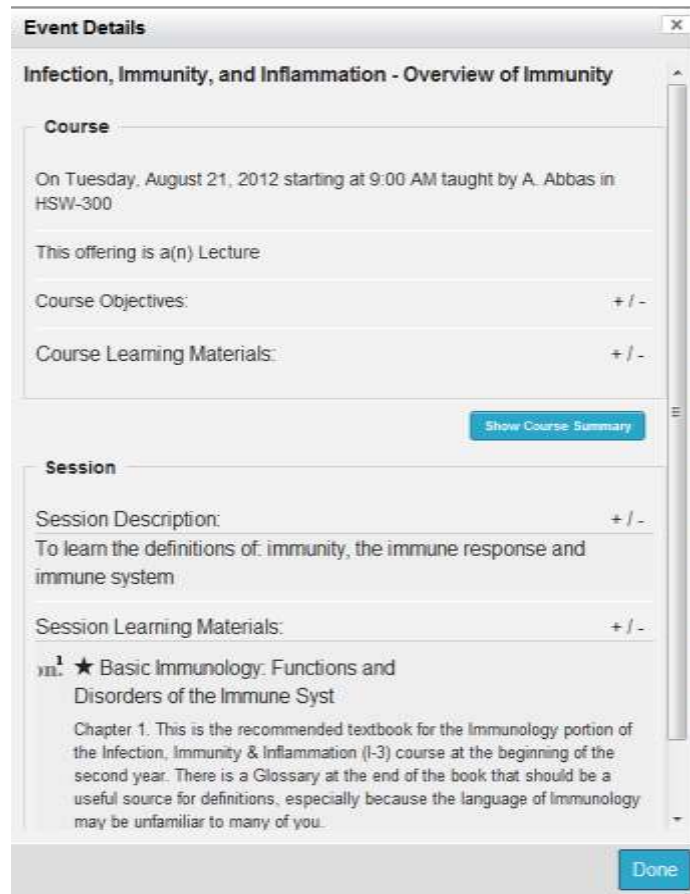
Allows the user to search and display all activities for any course in the selected academic year and school which have the selected search attributes. Search is possible by each of the following, or any combination of the following categories of data:

- *Topic (discipline)*
- *Session Type*
- *Course Level*
- *Program/Cohort*

In either of these search modes, a search may be made against the entire school curriculum entered into Ilios, or exclusively against the user's specific enrollments and associations by selecting the appropriate radio button at the bottom of the search panel.

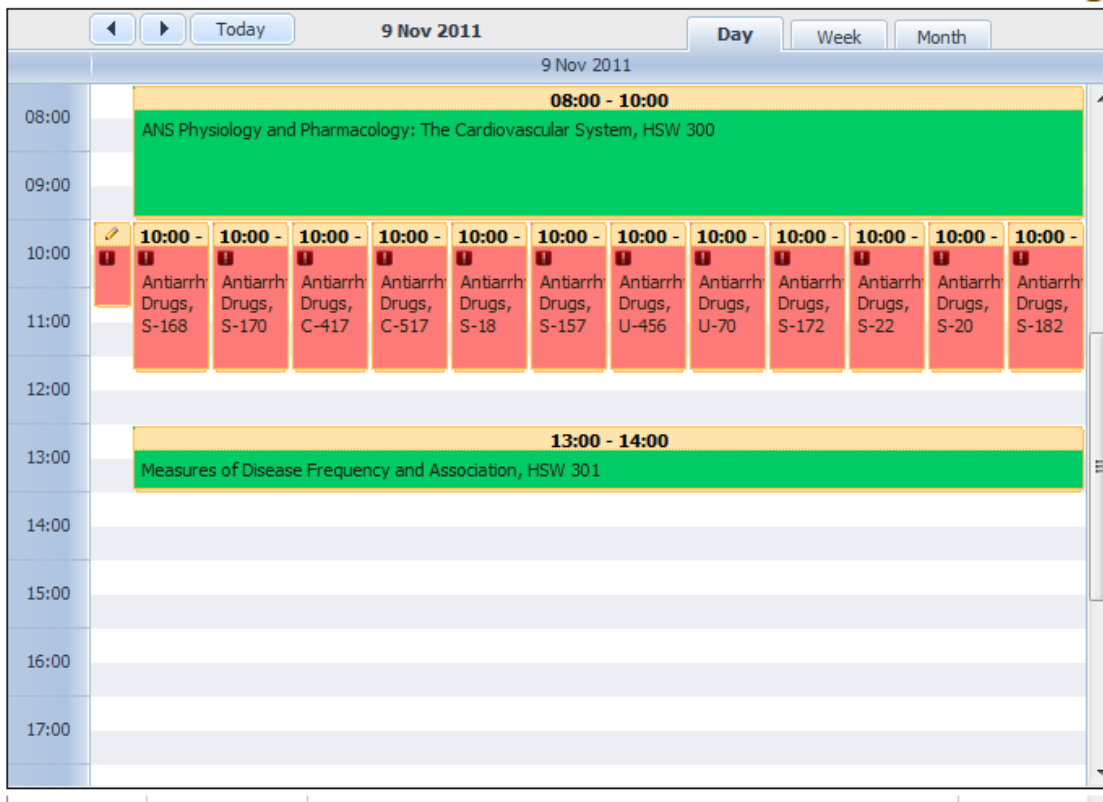
Once the desired selections for search are made, clicking the "search" button will activate the search and display the results. A breadcrumb text above the calendar will display the search filter selections which have been chosen. These results will remain on display until either a new search is entered, or the search is cleared by clicking the red "delete" icon at the left of the breadcrumb search filter information above the calendar. The search panel may be toggled between display and hidden modes by clicking the search icon.

Detail information is available for all search results on the calendar, however: learning materials for which the user does not already have access privileges will be visible (file name and info) but not be downloadable.



The detail panel provides access to offering details of time, place, date, and instructor; course and session objectives, associated learning materials, and the session description. Clicking on the *Show Course Summary* link at the upper right of the detail panel will open a complete listing of all sessions and their details for the entire course, including learning materials.

The option is available to provide visual change alerts for calendar events. If activated in the Ilios configurations file for an institution, the alerts will add a small icon to the upper left of any calendar event (day and week view only), as well as to its agenda list item listing whenever there has been an addition or update for that event. The icon will display for a set number of days after the change (configurable value, currently set to 3 days; system default is 7 days). After that, the event display returns to normal.



**Recent Activities:**

The *Recent Activities* list will display the links to the last five actions taken which involved saving data to the database. Links to actions which caused deletions may cause unexpected behavior (such as a blank landing page after following the link, or difficulty loading the Recent Activities list), but will not change or endanger data in the system.

**My Courses:**

The *My Courses* list provides quick links to all courses with which the user is directly associated. If the user is a Course director, instructor, course designer/admin, or otherwise associated with the course, it will appear in this list.

**My Programs:**

The *My Programs* list provides quick links to all programs with which the user is directly associated. If the user is a Program director, admin, or otherwise associated with a program, it will appear in this list. Courses within that program will not, however, automatically be listed in the My Courses list: to be listed, there must be a direct association.

**My Reports:**

The *My Reports* module provides quick search capacity for many categories of data within the system. It currently allows for the custom generation of more than 60 different list-style reports --- courses, programs, individuals, and curricular details --- within the contexts of their use. These search reports, once created, will remain on the dashboard as long as the user wishes. They may be deleted or recreated at any time. For a current list of available report combinations, please see <http://bit.ly/ISfr3J>

## My Alerts:

The *My Alerts* module acts as a simple “sticky note” reminder system for the user. Any message of up to 150 characters may be entered here, with a due date, to act as a simple reminder for activities or items that are pending. When an item comes due, it will appear in the list in red, with a “due” notice. Items can be removed at any time by the user, and will remain on the list until the user does so. Currently, Alerts in this module are not shared with other users of the system. Items may be entered for any due date, but the display is currently set to show only those items due up to and including 7 days ahead from the current date.

Users with higher privileges will also see the access to the Administration tools. Non-administrative users (such as students) will be presented with a similar view, but with only the Ilios calendar display, without the additional portals and widgets. Students with additional administrative or instructional roles in Ilios will be provided a button directly above the calendar to allow them to toggle between student and non-student views.

## Viewing Curricula of other schools in a multi-school institution

For institutions with multiple schools or unique curricula deployed within Ilios, it is possible to access the curriculum of another school by using the schools selection tool, which appears in the upper right of the dashboard title bar for users who have had multi-school permissions assigned to them. Any user in the system may be assigned access to one or more available schools in addition to their default home school. Assignment is managed in the Permissions Administration page (see below). Please note that in this release, the overall role and permissions set for a user in their default home school will be carried over to any other school to which they have been provided access. This applies to both students and non-students.



Once permission has been granted to a user, the select switch for the various schools will display in the upper right of the title bar of the dashboard.

## Managing Programs

The screenshot displays the Ilios2 Program Management interface. At the top, there is a navigation bar with tabs for Home, Programs, Instructors, Learner Groups, and Courses and Sessions. The main content area is titled 'Program Management' and shows a form for editing a program. The program is titled 'Doctor of Medicine' and has a duration of 4 years. Below the form, there is a list of academic years from 2006-2007 to 2013-2014, each with a 'Published' status. The interface also includes a sidebar with expandable sections for Competencies, Objectives, Topics, Program Directors, and Stewarding Departments.

The Ilios *Programs* module allows for the creation and management of any number of unique programs of study for your institution. A program may be defined as a course of study which has 1 or more academic years of involvement, and in which learners matriculate and graduate as an identifiable group (a “cohort” of learners).

An institution may have any number of programs.

This model allows for the greatest flexibility among institutions to manage programmatic curricula according to their own models and needs.

To create a program, a user must have full edit privileges. Simply click on the “[Add New Program](#)” link, provide a name, a short title (usually the abbreviation of the degree acquired by completing the program), and a duration, in years, of the course of study. Clicking the Save button will save your work immediately as a new Program.

Once a program is created, other attributes may be added to that program by creating individual Academic Years. The Academic Year is a container for all curricular material for that particular year of the program. All additional program attributes are unique to each academic year of that program; *attributes given to a program’s academic year and saved will be automatically copied to the next academic year*, so it is best to create a single academic year, add its attributes, and then add further years as needed.

### Program attributes:

- *Name* - Up to 200 characters in length.

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- Short Title (abbreviation) - Up to 10 characters in length.
- *Duration* - May be between 1 and 10 years.

### *Program Year attributes:*

- *Academic Year* - may be set up to 7 years forward, or 5 years backward from the current year.
- *Competencies* - selected from a school-specific, pre-defined list of competency domains and sub-domains.
- *Objectives* - Free text entry. Program objectives, once entered, may be associated with available competencies.
- *Topics* - selected from a school-specific, pre-defined list.
- *Program Directors* - Selected from list of available names. The list is populated with users identified and tagged as “Director” level in the user access system. (see op.48)
- *Stewarding Department(s) or School(s)* - Selected from list of available departments/schools, which are loaded into the system on implementation. Assigning a school or department other than the default school of the program will provide access to that program and its associated curriculum for the stewarding school, allowing for interdisciplinary curriculum development and management. PLEASE NOTE: for any course which has multi-school stewardship, that course will appear in the search listings for each stewarding school. This may make it appear to some users that there is a unique course in each school which shares the same attributes, but this is not the case. It is the same course, and each school is accessing the same data.

To search for a previously created Program, click on the “search” button above the Program Name field, and type a search value of at least two characters, then click on the adjacent search icon or hit the return button on your keyboard. A list of all matches will populate your search panel; highlighting and selecting the desired program will load it to your screen. NOTE: a 2-character search will run as a “trailing wildcard” search, and match only those programs beginning with the characters entered; entering three or more characters in a search string will run as an “open wildcard” search, and match any program containing that string of characters in its title.

# Course and Session Management

## Courses

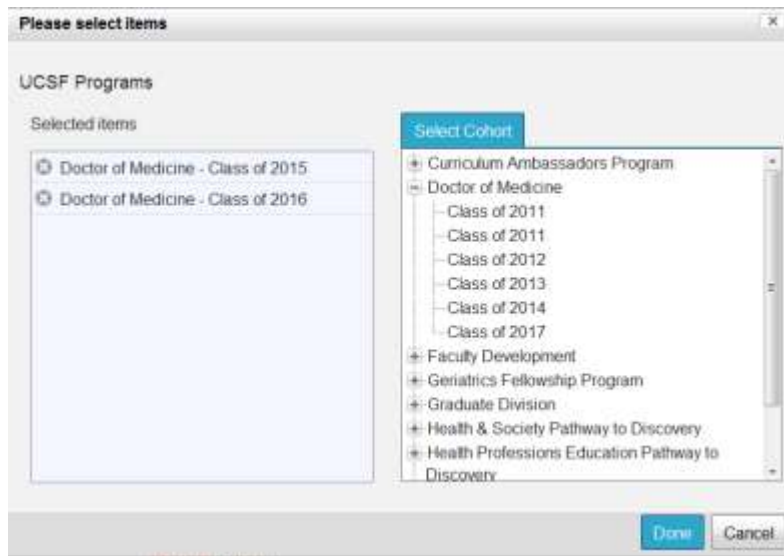
The screenshot displays the Ilios Course Management interface. At the top, there is a navigation bar with links for Home, Programs, Modules, Learner Groups, and Courses and Sessions. The main content area is titled 'Course Management' and shows the details for a specific course. The course name is 'Foundations of Patient Care Year 2', with a Course ID of 'IDS-132' and a Course Year of '2011-2012'. The course level is set to '2'. The program is 'Doctor of Medicine' and the cohort is 'Class of 2014'. The associated student groups include 'East', 'West', 'FPC SG 1', 'FPC SG 2', 'FPC SG 3', 'FPC SG 4', and 'FPC SG 5'. The start date is 'Tue Aug 30 2011' and the end date is 'Fri Feb 24 2012'. The competencies listed are 'Patient Care' and 'Oral Case Presentation'. The topics include 'Clinical Skills'. The directors are listed as 'Chong, Arina; Ciccarone, Daniel; Azzam, Aron F.; Miller, Jessica; Nee, Heather E.; Monamara, Margaret M.; Miller, Jessica H.; Istanbul, Allison C.; DeVries, Charlie; Marland, Chandler H.; Fernandez, Arana J.; Luna, Nicole M'. The M&S Terms are 'Clinical Competence: Patient Care'. There are buttons for 'Save Draft', 'Publish Course', and 'Add New Course'. At the bottom, it shows '42 sessions found for this course' and a sorting option 'Alpha ascending'.

Courses are unique to the academic year in which they are taught; to create a new course, click the **“Add new Course”** link, and provide a course name and select the appropriate year of instruction. To manage an existing course, click on the **“search”** link directly above the Course Name field, and type a search value of at least two characters, then click on the adjacent search icon or hit the return button on your keyboard. A list of all matches will populate your search panel; highlighting and selecting the desired program will load it to your screen. NOTE: a 2-character search will run as a “trailing wildcard” search, and match only those courses beginning with the characters entered; entering three or more characters in a search string will run as an “open wildcard” search, and match any course containing that string of characters anywhere in its title.

For courses which are given more than once in an academic year, the course name or Course ID should identify this: for example *Intersession 1 (2011-12)*, *Intersession 2 (2011-12)*, *Intersession 3 (2011-12)*, IDS 33A, IDS 33B, etc. Creating multiple instances of a course within an academic year is handled using the *Course Rollover* feature. For courses that are given more than once in an academic year, the listings are in chronological order according to start date.

In order to populate courses with learner groups, the course must first be associated with the desired Program(s), as well as the desired learner cohorts within that program. Cohorts are listed by graduation year. If you select the program Doctor of Medicine, and its cohort Class of 2015, then the course will now be eligible for population with any learner or learner group from that program / cohort. A course may be associated with any number of programs and cohorts, allowing for interdisciplinary courses as well as mixed level courses. Only cohorts to which the user is provided access, either by explicit permission granted for school or program, or by joint stewardship of a

program, will be available for selection. Cohorts previously selected for which a user has no permissions will not be changeable by the user.



**Course attributes:**

- *Course Name* - the long title of the course, entered on course creation. 200 character max.
- *Course ID* - Field allowing any internal or external ID up to 18 characters to be entered.
- *Tracking ID* - an auto-generated ID displayed directly below the Course ID field, for use in associating courses with external systems such as enrollment.
- *Course Year* - Academic year during which instruction will take place. Set at the creation of the Course object, this field cannot be modified once it is saved.
- *Course Level* - May be set at any numeric value from 1 to 5. The Course level identifies what point in the curriculum trajectory the course is meant to be addressed by learners, but is not a constraint.
- *Clerkship* - A course may be identified explicitly as a clerkship using this attribute. The available selections are *Block clerkship*, *Integrated clerkship*, or *Longitudinal clerkship*. These may be modified as necessary in the *course\_clerkship\_type* table. The default value for all courses on creation is “not a clerkship”.
- *Programs / Cohorts* - Selected from the list of available Cohorts and Programs already entered in the system. Only authorized users from a given program’s home school may edit that program cohorts relationships to the course.
- *Start Date* - A calendar selection, should be within the range of the Course’s academic year.
- *End Date* - A calendar selection, should be within the range of the Course’s academic year and fall after the Start Date.
- *Competencies* - Competencies listed for a course are a subset of the full set of competency domains for the program(s) associated to the course. When a course objective is linked into the competency tree via its association to a program objective, the competency domains to which those program level objectives are assigned will be displayed and reported as the specific attributes of the course.
- *Objectives* - Free-text entry field. Each Objective entered at the course level may be associated to a single Program-level objective for each program associated with the Course. So if a course is associated with a single program cohort, then each course objective may have one associated parent program objective from that program’s set of objectives. If there are five unique program cohorts associated, then each course



objective may be associated with one objective from each of the five programs. Only authorized users from a given program’s home school may edit the relationships of an objective to that programs cohorts. Course objectives may also be assigned their own MeSH terms.

- *Course Director(s)* - Selected from list of available names. The list is populated with users identified and tagged as “Director” level in the user access system. (see op.48).
- *Topics* - Selected from a school-specific, pre-defined list.
- *MeSH terms* - Selected by searching the MeSH database.
- *Learning Materials* - Course level learning materials are available to all Sessions of a Course, and are entered using the Learning Materials search/upload tools ([see below](#) for more info).

## Sessions

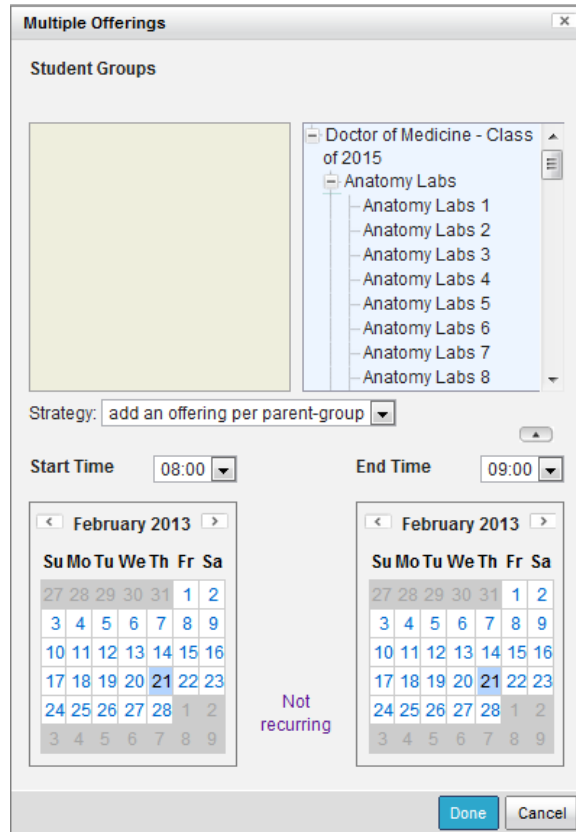
The screenshot displays the Ilios interface for editing a course session. The session title is "Care of Dying Patients and their Families Lecture". The session type is "Lecture". There are two offerings: "Tue Dec 04 2012 13:00 PM - 14:00 PM" and "Thu Dec 06 2012 13:00 PM - 14:00 PM". The content type is "Care". The description is "Care of Dying Patients and their Families Lecture". The topic is "Clinical Skills". The MeSH terms are "Attitude to Death, Palliative Care, Patient Care Team, Terminally Ill". There are four learning materials listed: "FPC4b3 Syllabus", "Doc, How Much Time Do I Have?", "A Physician's Guide to Talking about End-of-Life Care", and "Negotiating Cross-Cultural Issues at the end of Life". There are four objectives listed: "Interpersonal and Communication Skills - Identify the three things dying patients and their families want most from their physicians", "Interpersonal and Communication Skills - Describe four important components of the role of the physician at the end of life", "Medical Knowledge - Discuss common symptoms many patients experience at the end of life and their treatment", and "Patient Care - Recognize that there are cultural differences in approaches to death and dying AND that patients from the same culture may not respond in the same way".

Once a course has been saved, either in draft or published form, *Sessions* may be added to the course. A Session is a discrete instructional unit of curricular material or activity within a course. To add a new session, simply click the “[Add Session](#)” link at the bottom of the course display. This will create an empty Session, ready for population with data.

To save a session, it must have a title. Other attributes may be added at any time prior to publishing the session.

Once a session is saved, offerings of that session may be generated on the curricular calendar. Offerings may be created individually on the calendar and populated with group, instructor and location information using the calendar tools. Offerings also may be generated using specific learner groups as the seeding mechanism, by selecting the “[Create a set of offerings by Group](#)” link. This link allows you to select one or more eligible learner groups, a time slot on the calendar, and automatically generated offerings via one of two strategies: 1) a single offering in that time slot for each selected group, regardless of the number of subgroups or divisions in the selected group (“add an offering per parent group”); or 2) an offering for each subgroup within a selected group (“add an offering per subgroup”). For example, using the first strategy, selecting the student group “anatomy labs” which has 38 subgroups would create a single offering for all the learners in the group anatomy labs and its subgroups. Using the second, selecting the group “anatomy labs” would create 38 unique

offerings, and associate each of the subgroups and its learners with one of those offerings. Beginning with version 2.2, the default selection is strategy #2. The Default Instructors and locations for each group will be displayed as the Instructors and Locations for the offerings created; these may be edited via the calendar any time after creation.



Sessions may also be saved as independent learning units, providing an estimated number of educational hours rather than a calendar-based date and time. To create such a session, select the “*independent learning*” check-box, and enter the associated number of educational hours, learner groups and instructors (added by selecting the “Add Groups” link), and a “due-by” date. Independent learning sessions do not take an additional “session type” as a value (the session type is by default (“independent learning”), and appear in the calendar as 30 minute blocks on their due-by date.

**Session attributes:**

- *Groups* - (Currently displays only in aggregate at the course level.) Display only. Shows a list by name of the Learner Groups currently associated with the Session.
- *Session Type* - Selected from a predefined list of instructional and assessment methods, loaded into the system at implementation.
- *Description* - Free-text entry allowing for detailed information, instruction, and description of the Session curriculum and activities.
- *Core/Supplemental* - Allows for the flagging of elective vs. required curriculum units.
- *Special Attire Required* - flags the content as noted. Special instructions or details should be entered in the Session Description field.
- *Special Equipment Required* - flags the content as noted. Special instructions or details should be entered in the Session Description field.
- *Topics* - Selected from a school-specific, pre-defined list.
- *MeSH Terms* - Selected by searching the MeSH database.
- *Learning Materials* - Session-level learning materials are available only to the specific Session to which they belong. ([see below](#) for more info).

## Ilios User Guide

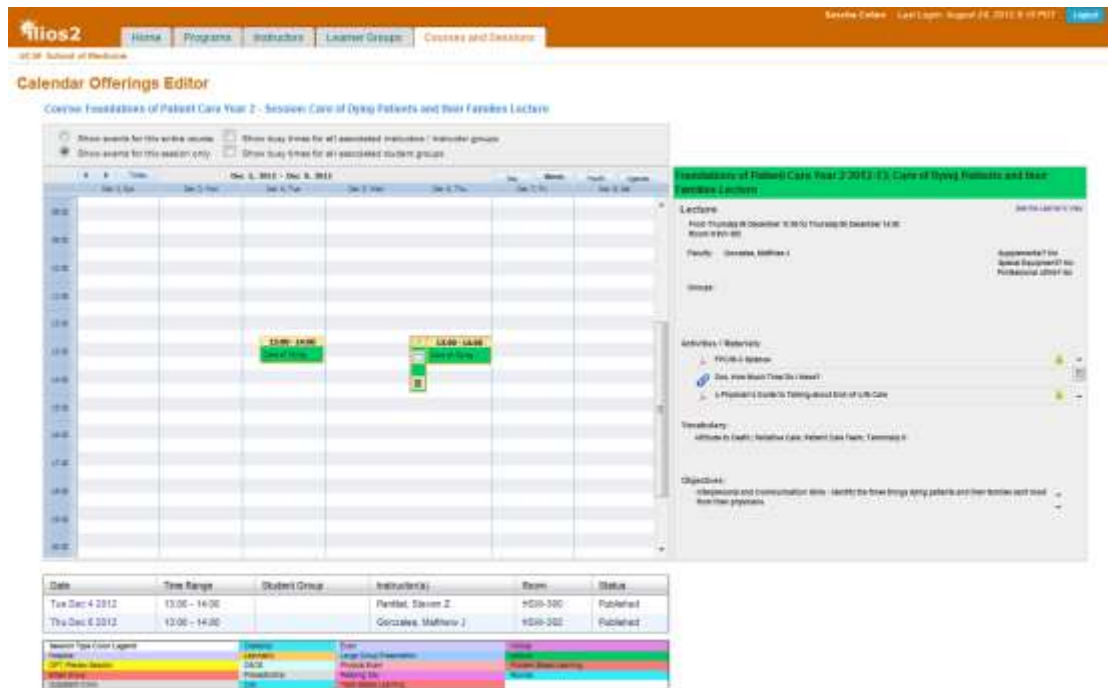
- *Objectives* - Free-text entry field. Each Objective entered at the Session level may be associated with any number of the parent course's Course-level Objectives. Session objectives may also be assigned their own MeSH terms.

### *Session attributes unique to independent learning:*

- *Expected instructional hours* - Numeric entry of the total time in hours allotted for the activities associated with the session.
- *Due Date* - Date by which time the activities are expected to be completed. Default is the final day of the course.
- *Assigned Learner Groups* - since there are no calendared offerings for ILM, groups are associated directly to the session
- *Assigned Instructors* - since there are no calendared offerings for ILM, the responsible instructors of record are associated directly to the session.

## Calendar and Offerings

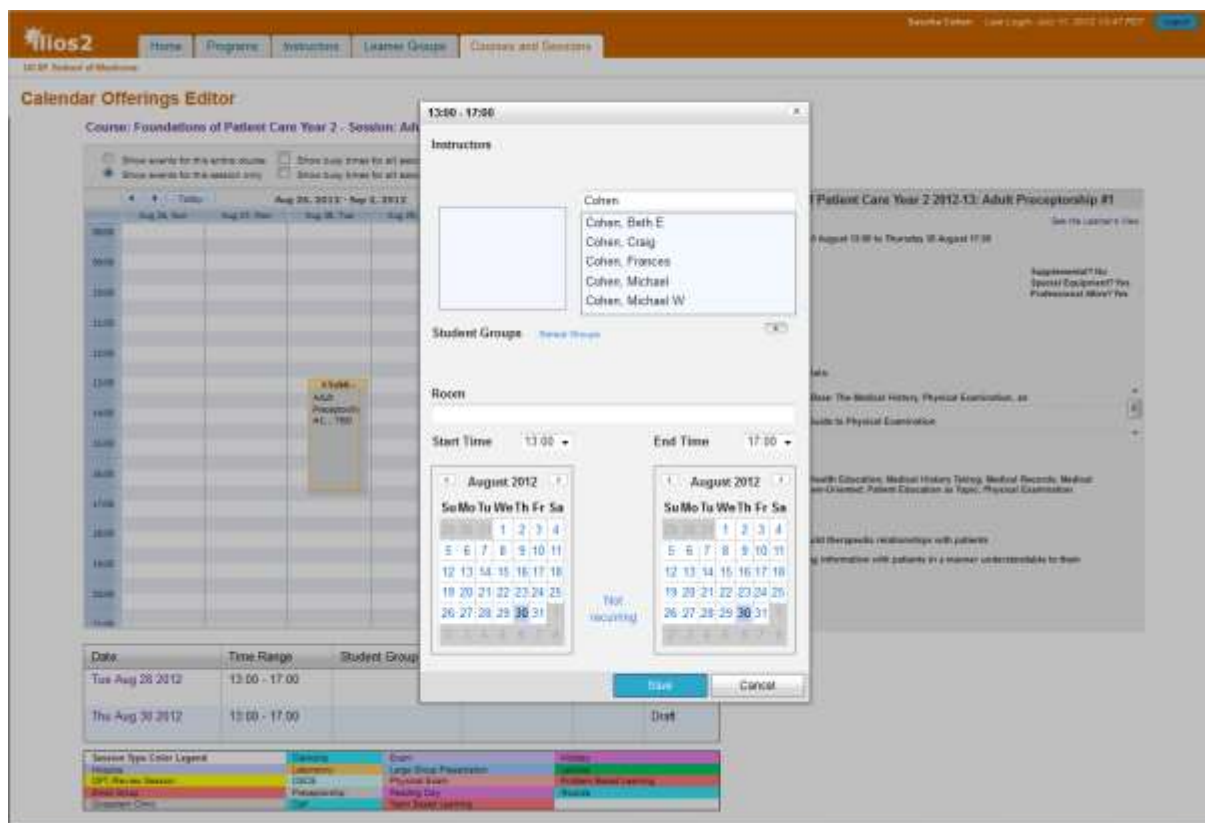
The scheduling and review of offerings occurs via the Calendar interface. The Ilios calendar is a distinctly different interface than the other screens for collecting and managing curricular data. As the focal point of information delivery, the calendar is focused on providing standard calendar and scheduling information to the Ilios user population.



The scheduling of offerings for a session may happen in two different ways. Multiple offerings may be generated for the same scheduled time on the calendar, but for different unique learner groups. This is facilitated with the “Create a Set of Offerings by Group” link found in each session display and noted above. Individual offerings may be created by going to the calendar, via the “Go To Calendar” link. For both these options, the session must be saved with a valid name prior to the scheduling of offerings.

Selecting the link to create multiple offerings will bring up the tool to select the desired learner groups, a time and date for the offerings, and the option of making the offerings recurrent. For each group selected, an offering will be generated for display on the calendar. The default instructors and locations for each learner group will be displayed for their offering; these may be modified afterward from the calendar interface.

For single offerings, the link provided will take a user to the calendar interface. From here, clicking on the desired time and date will open a tool allowing the addition of learners, instructors, location, as well as the manual modification of start and end times. Once on the calendar, offerings may be managed via drag-and-drop, or via the popup tool, available at any time for any offering other than independent learning by double-clicking it on the calendar display.

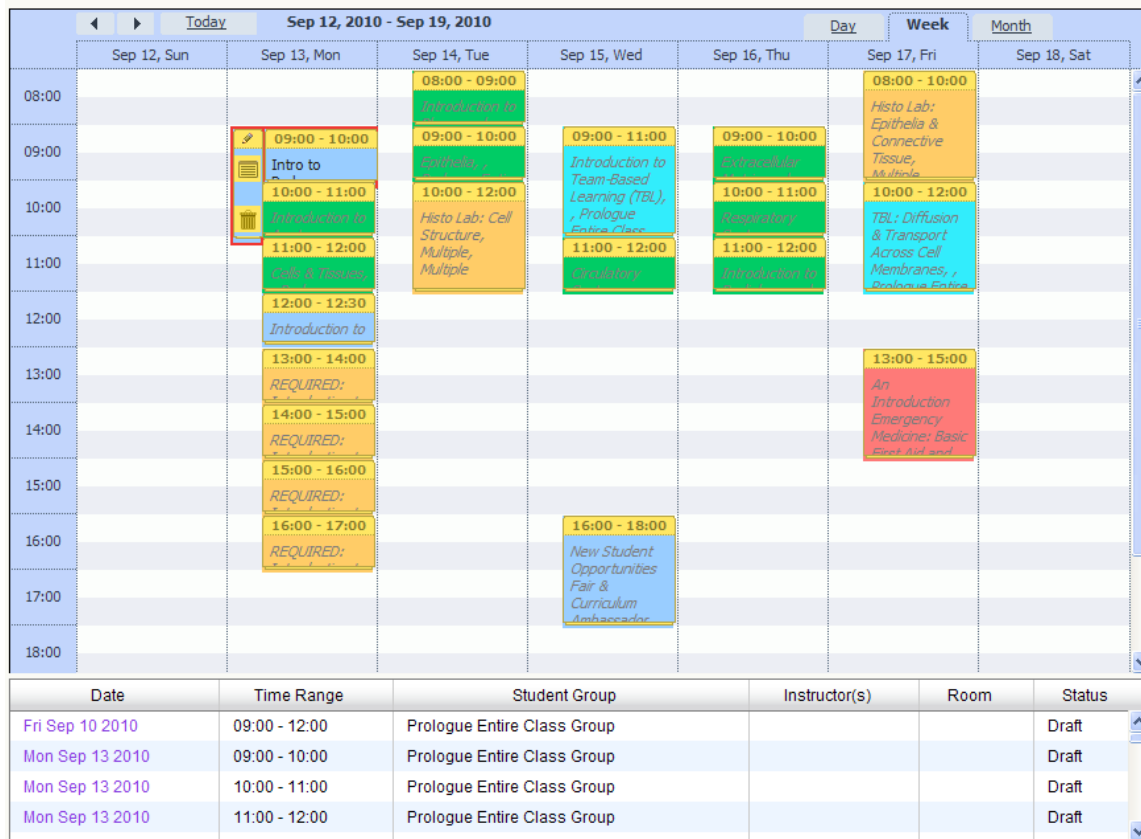


The Ilios Calendar Display provides a typical web calendar interface for viewing. The calendar will display a Week, Month, Day and Agenda view, selected from the tabs at the top right of the display. Each event on the calendar shows a header that displays the event start-end times, and the blocks are color-coded to distinguish different session types. The Agenda view provides a static list of events for the current week and next 60 days from the current date. The Session Name, associated Learner Groups, and scheduled location are all shown in plain text in the calendar blocks. For events with multiple occurrences at the same time, but for different groups/locations, the block will display the word “multiple” in the week/month views. Detail data will display in the day view.

For ease of use, an inspection panel showing the details for the session being managed will display on the right side of the screen whenever a specific calendar offering for that session has been selected (clicked on). A sortable spreadsheet-format table of the offerings associated with the current session is displayed beneath the calendar. Clicking on the links in this table will take you to the display dates of the linked offering.

# Ilios User Guide

Edit Calendar Offerings - Course: Prologue - Session: Intro to Prologue



There are filters that can be applied to the calendar view; they are located above the calendar itself. The filters currently available are:

- Show All Offerings for the Entire Course;
- Show Offerings for Current Session Only;
- Show Busy Times for All Learner Groups Associated with this Session;
- Show Busy Times for All Instructors Associated with this Session.

These may be used in any combination to aid in display management.

Only offerings for the session currently being worked are editable in the calendar for that session; when offerings from other sessions are displayed, it is as read-only. If you wish to switch from working one session's offerings to another session, you may either return to the Session management display via the link at the top of the calendar (which shows the current session name), and from there select the Session you want to move to, or, if you have clicked on a different session's offering on the calendar, you may select the link displayed at the top of the inspection panel for that session's offering, and go directly to that session.

### Offering attributes:

- **Instructors** - Selected from the list of available instructors in the system. Please note: Instructor lists in Ilios will provide up to 500 unique listings for review, as well as an auto-complete filter search at the top of the list panel. For names which are beyond the 500 item limit, while they will not display on initial load, they may be found and accessed using the auto-complete search.
- **Learner Groups** - Selected from list of eligible associated groups attached to the course.
- **Location** - text entry.
- **Date** - Calendar selection.

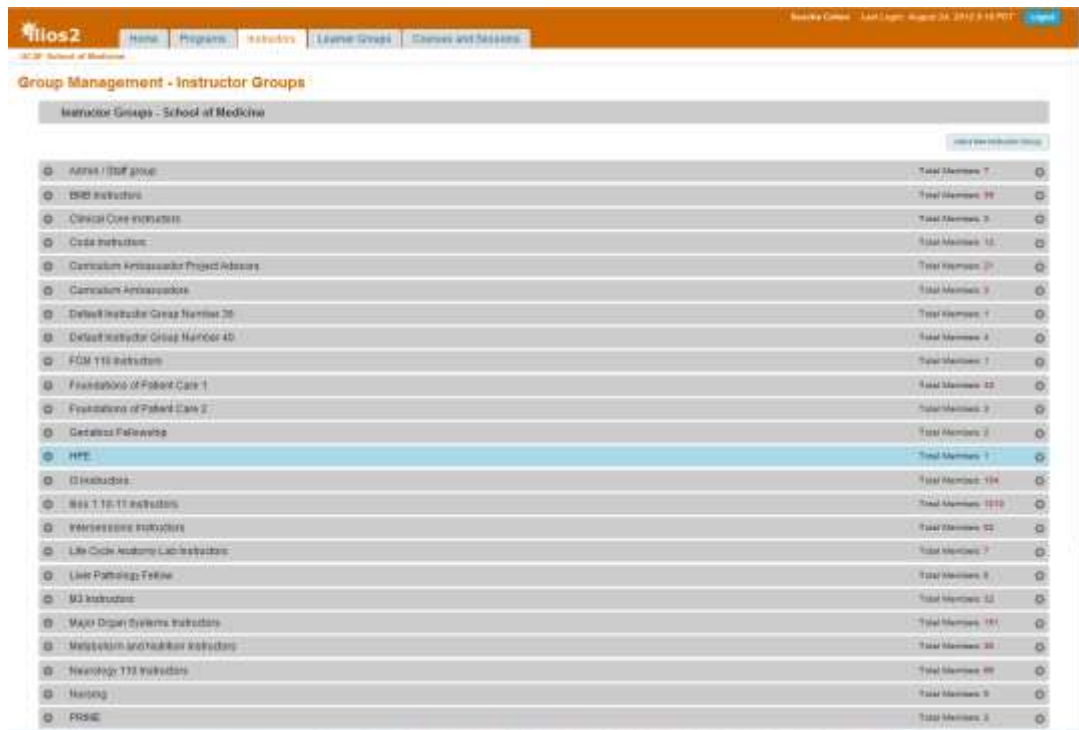
- *Start Time* - Calendar selection.
- *End Time* - Calendar selection.
- *Recurrence* - Allows for the recurrence of an event on a specific weekday or days, for a specified number of weeks (or until a specific date).

## Course Summary

The Course Summary popup provides a complete view of a given course: all detail for all sessions. It is available via the “show course summary” link in the details panel for any course event on the calendar, as well as on the course management page. The course summary loads a view of the entire course, similar to the administrative course edit page, only with no edit privileges. When viewing the summary from any location other than the course edit page, the summary will only display those sessions which are fully published (non-TBD); other material will not appear. *When viewing from the course edit page, however, the contents will mirror those displayed on that page, regardless of published state.*



# Instructor Group Management



The Instructor Group module in Ilios allows for the creation of reusable and trackable sets of instructors that can be associated to course/session activity. The groups are populated from the existing directory of instructors, and can be modified and added to as needed. An instructor may be associated with any number of instructor groups, or none at all. Instructors and instructor groups are associated with course content at the offering level for each session.



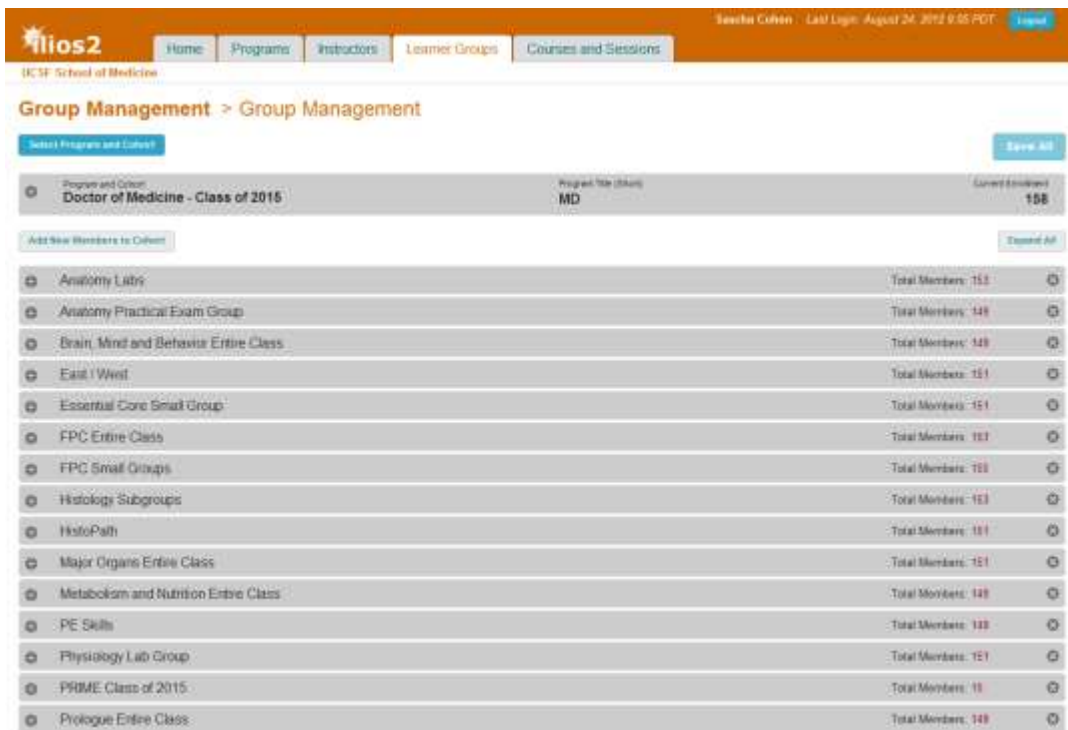
Instructors who are not already in the directory provided should typically be added via the administrative user tools (See p.43). However, they may be added manually here, either individually or via csv-formatted spreadsheet using the “add new members” link in any existing group.





Please note: Instructor select lists in Ilios will provide up to 500 unique listings for review, as well as an auto-complete filter search at the top of the list panel. For names which are beyond the 500 item limit, while they will not display on initial load, they may be found and accessed using the auto-complete search.

## Learner Group Management



Group Management is a method of tagging, grouping and managing the learners who are attached to curricular activity in Ilios. This module allows for the association of sets of learners to specific content, and the makes possible reporting on those associations. The demographic details of individual learners are not tracked within Ilios.

The groups in Ilios are persistent data containers, which exist outside the context of a course or session. Each Group belongs to a specific program cohort; the members of that cohort may be added or removed from any of its groups. A group may be attached any number of times to any number of sessions in any number of courses. Groups may also be subdivided into any number of smaller groups. Groups are associated to courses and sessions via calendared offerings of sessions and independent

learning units; the groups of any learner cohort will be available for association to a session once that cohort is attached to the course in question.

For a learner to be associated with curricular material in the current version of Ilios, they must be associated with a learner group.

### Learner Groups are Hierarchical

A key to the group management system is understanding the hierarchical nature of the groups, and the way it relates to programs of study.

For each entering class of learners, a unique container is created in the system. This is the learner “All Class Cohort”. It is populated from the campus systems with individual learners. Typically, learners should not be added manually to the Ilios system; all registered students should be available from the feed provided in the administrative tools. However, if non-registered learners need to be entered into Ilios, the process is similar to that for Instructor Groups. Learners who are not already listed as part of a cohort in the directory provided may be added manually, either individually or via csv-formatted spreadsheet using the “[add new members to all class cohort group](#)” link. Currently, a student may only be a member of a single Class Cohort in Ilios.

From a particular cohort, any number of “top level” groups can be created. *Each top level group will by default contain all the current members of the selected cohort*; you may create any number of top level groups. Individual members of any group may be removed (“unassigned”) at any time. In this way, top level groups may be modified to contain specific subsets of the total cohort population, and lower level sub-groups may be managed as necessary. Each student in a Class cohort may belong to multiple top level groups.

Once a top level group is created, it may be partitioned into any number of smaller groups (*sub-groups or designations*), which will then be seen as members of the top level group. Those smaller groups may also be divided into smaller partitions. A group may have as members both individuals and groups --- all remain members of the same “top level” group.

The screenshot shows the Ilios2 Group Management interface for the 'Doctor of Medicine - Class of 2015' cohort. The interface includes a navigation bar with 'Home', 'Programs', 'Instructors', 'Learner Groups', and 'Courses and Sessions'. The main content area displays a list of sub-groups under the heading 'Group Management > Sub-Groups'. Each sub-group entry shows its name, default instructor(s), default location (room #), total members, unassigned members, and an 'Open This Group' link. The sub-groups are organized into a hierarchy, with 'Anatomy Labs' and 'Anatomy Practical Exam Group' at the top level, and 'Practical Exam Group A-D' and 'Brain, Mind and Behavior Entire Class' as sub-groups. The 'East / West' group is also listed at the bottom.

Group Name	Total Members	Unassigned	Open This Group
Group: Anatomy Labs	153	2	Open This Group (36)
Group: Anatomy Practical Exam Group	149	0	Open This Group (4)
Practical Exam Group A	37		
Practical Exam Group B	37		
Practical Exam Group C	37		
Practical Exam Group D	36		
Group: Brain, Mind and Behavior Entire Class	149	149	Open This Group (0)
Group: East / West	151	0	Open This Group (2)

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A learner may only appear once within the tree of a single top level group. In the example shown above, a member of the Anatomy Practical Exam Group may be a member of that top level group, or placed in one of the subgroups shown (A,B,C,D). They may *not* be a member of both Practical Exam Group A *and* Practical Exam Group B.

Note that when selecting learners for addition to a group, disabled user names are displayed in grey, to allow for historical tracking and management. They still may be added/removed from groups, but the users will not have access unless their accounts are re-enabled.

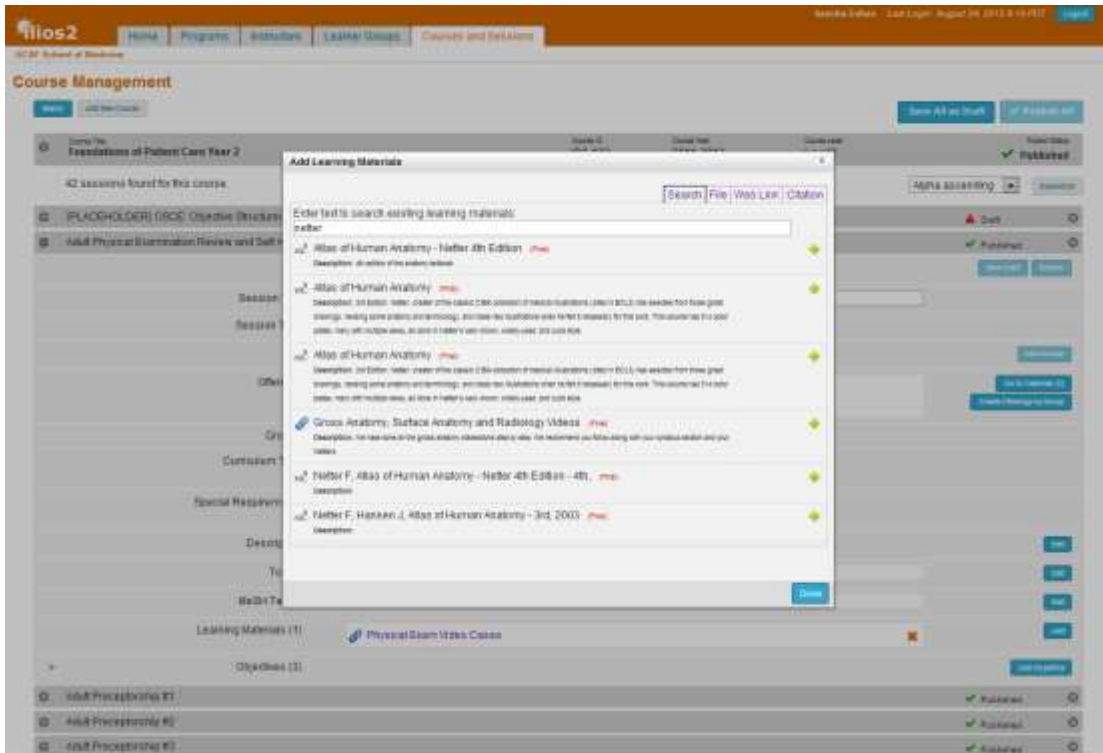
Only one group may be edited at a time To open a different group for editing, either a parallel group in the same level of the hierarchy, or a group in a higher level of the hierarchy, click on the “open this group” link; this will close the group currently available for edit, and open the selected group for editing and management.

### *Learner Groups Attributes:*

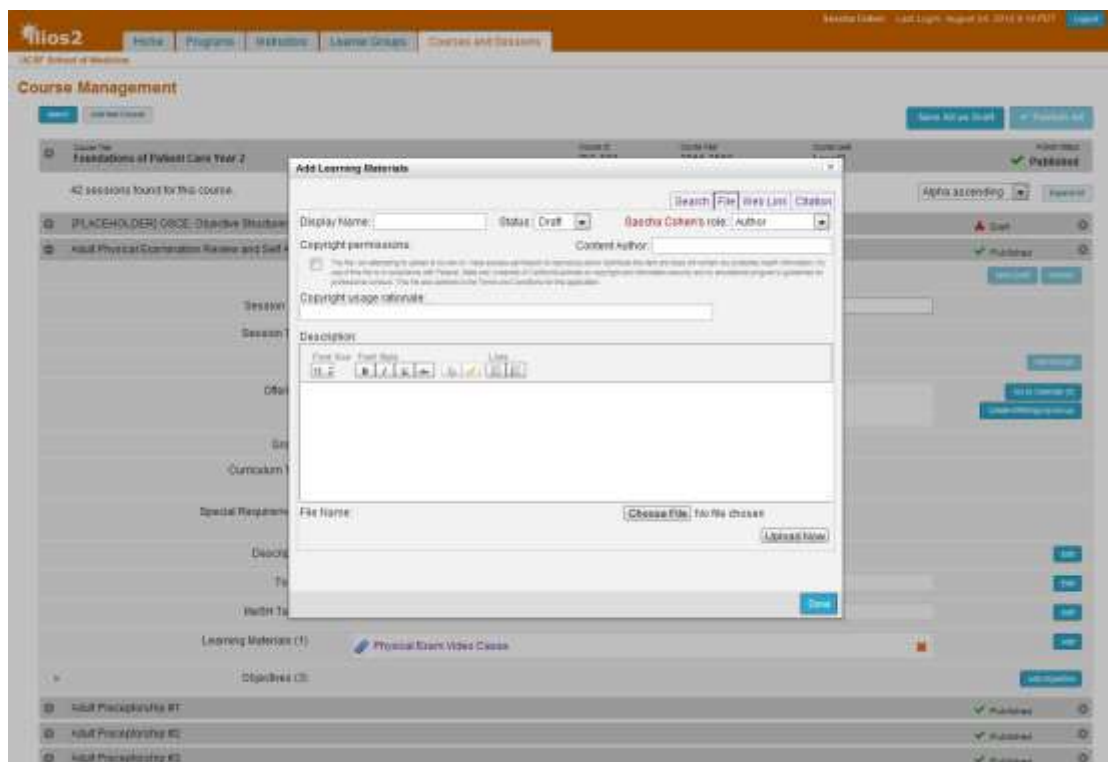
- *Default Instructor(s)* - Selected from the existing population that has been entered into Ilios by campus systems and manual entry. Shown in display as the instructor of record for activities to which a group is associated when no other instructors are identified.
- *Default Location* - Shown in display as the location of record for activities to which a group is associated when no other location is identified.

## Learning Materials

Learning Materials may be attached to courses or sessions. In order to be used with Ilios, materials must be tagged with certain additional information: a display name, owner and copyright information, MeSH vocabulary, etc. These elements are available for the user to input and edit when Learning Materials are loaded to the system.



Learning Materials are currently stored in an Ilios-specific file directory system. Items in the file directory may be attached to the curriculum directly by searching the repositories from the search interface for Learning Materials; if a desired item is not found, it may be uploaded directly to the server from the same interface.



Learning Materials may be physical objects (digital files) such as presentations, images, documents, video and sound recordings; they may be specific links to external data (websites, streaming media, or documents with a qualified URL); or they may be a citation for a 3<sup>rd</sup> party document, journal or reference.

Learning Materials may be given the status of “draft”, “final”, or “revised”. Only items stored with a status of “final” will be visible and accessible to learners; file owners may modify the status of their Learning Materials at any time. Only the owner of a file may modify its status.

Once Learning Materials are loaded to the system, their associated metadata attributes will be provided for review when they are selected.

In order to save a learning material in connection with a session or course, that session or course must first be saved to the database. Attempting to load learning materials to an unsaved session will generate an error alert.

***The current default size limit for learning material upload in Ilios is 100 MB.***

For a typical user, the download of a 100MB file will take between 3-10 minutes on a fast broadband connection, longer on a slow connection; not ideal for a student trying to access info in a timely manner.

For lectures and other similar media, where the likely method of delivery is streaming/viewing from the server, rather than downloading, materials should be stored elsewhere, and the links to them should be the resources saved in Ilios.

#### ***Learning Materials metadata attributes:***

- *Display Name* - Free-text entry field of up to 60 characters. This name is what will display for users of the system to identify the Learning Materials.
- *File Name/Web link/citation* - For files: the physical or actual name of the uploaded file; for web links, the literal URL; for citations, the specific cite content.
- *[file size]* - For uploaded files, the size in KB. Non-editable. Provided by system.

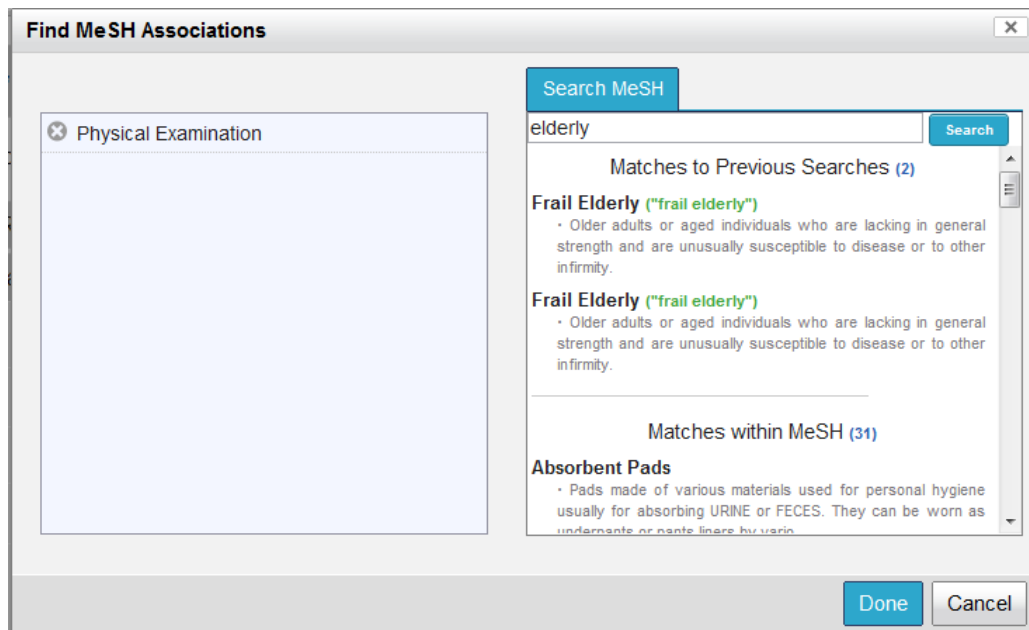
- *[file type]* - For uploaded files, the file mime-type / extension. Non-editable. Provided by system. *Allowed file types include: aiff, avi, csv, doc, docx, gif, gz, html, jpeg, jpg, mov, mp3, mp4, mpg, pdf, png, ppt, pptx, rtf, swf, tar, tiff, txt, wav, word, wmv, xls, xlsx, xml, zip.*
- *[Owner]* - The user who has uploaded the Learning Materials. Non-editable. Provided by system.
- Owner role - Select from Author, Co-author, or Instructional Designer.
- *Content Author* - Free-text entry field of up to 80 characters to capture the actual author (if known) of the Learning Materials content.
- *[Upload date]* - Non-editable. Provided by system.
- *Status* - Select from *Draft*, *Revised*, or *Final*. Only *Final* will appear to learners in the system.
- *Description* - Free-text entry field to allow brief description of the Learning Materials.

*For each unique use of a learning material, additional attributes may be added specific to that particular usage in the curriculum:*

- *MeSH Terms* - Selected by searching the MeSH database. MeSH terms selected are unique to a given instance of use for any Learning Materials.
- *Notes* - Free-text entry field to allow commentary and instruction for the Learning Materials. Notes may be set to be visible to all users, or set as visible only to instructional faculty/staff. Notes provided are unique to a given instance of use for any Learning Materials.
- *Required* - Identifies required vs. recommended materials in the context of use. Requirement is unique to a given instance of use for any Learning Materials. In the learner view, required items will be noted by a star to the left of the item title.

## MeSH

Ilios has incorporated a version of the searchable MeSH (Medical Subject Headings) thesaurus maintained by the U.S. National Library of Medicine, to allow the tagging of various levels of curricular data with appropriate (shareable) vocabulary.



MeSH terms may be associated with Courses, Sessions, Learning Materials, and Learning Objectives (at any level - Program, Course, or Session).

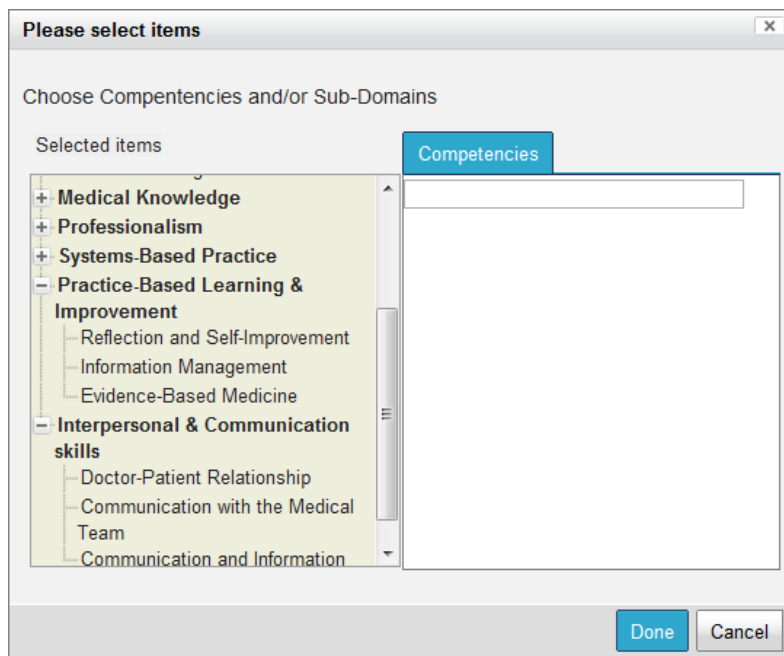
To select a MeSH term from the thesaurus, type in the word or phrase you wish to find, and hit 'enter'. The results will display all related concepts, terms and topics, along with their associated descriptor and tree node codes; at the top will display a list of those which have previously been returned and used for similar searches. Clicking a term will add it to the MeSH vocabulary for your selected item.

The current version of Ilios has the 2012 MeSH thesaurus loaded. Administrative tools are available to update the MeSH thesaurus in Ilios when desired.

To learn more about MeSH, visit the MeSH website: <http://www.nlm.nih.gov/mesh/>

## Competencies and Objectives

Ilios has a robust ability to track and manage educational competency domains as well as specific course- and session-level learning objectives. Objectives are entered as part of a complex tree or hierarchy; while each level of the curriculum structure (Program, Course, Session) may be provided with any number of competencies/objectives independently, these objectives may also be linked to an objective or competency at the level immediately above them if desired.



To learn more about the framework of the Ilios competency hierarchy, please see <http://slidesha.re/wUI5no>.

The competency structure for Ilios follows current usage for the UCSF School of Medicine, and conforms to the MedBiquitous draft specifications for Health Education Competency Frameworks.

To learn more about these draft specifications, visit the MedBiquitous website:

[http://www.medbiq.org/working\\_groups/competencies/](http://www.medbiq.org/working_groups/competencies/)

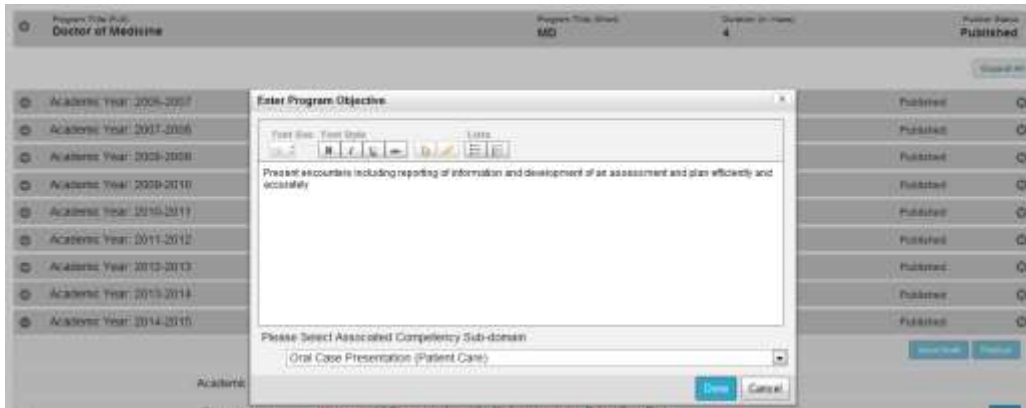
The hierarchy in the initial version of Ilios contains 5 levels available for competency-objective association:

- Competency Domain

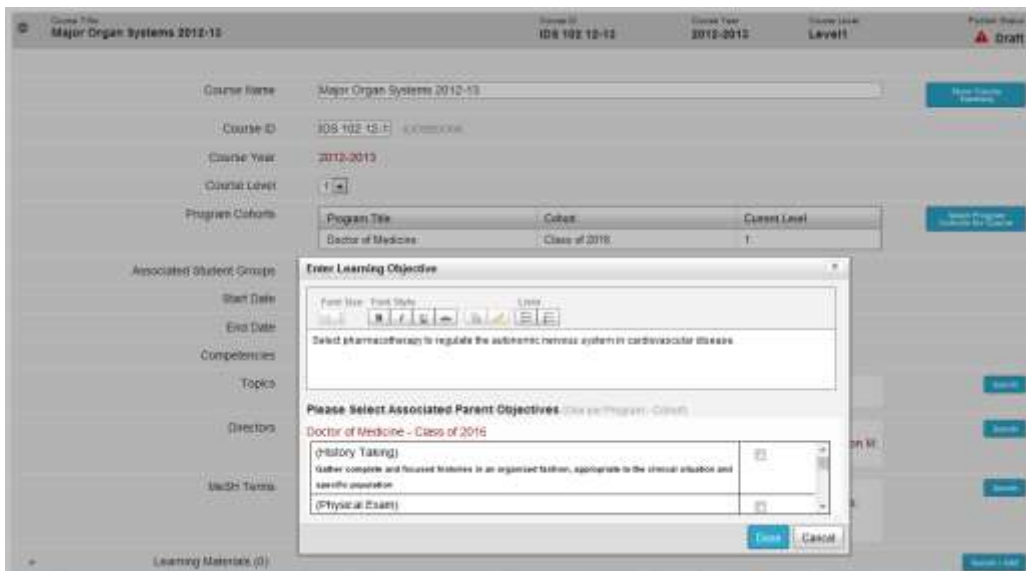
## Ilios User Guide

- Competency Sub-Domain
- Program Objective
- Course Objective
- Session Objective

Competency domains and their sub-domains are pre-loaded to the Ilios system. They are selected at the program level, and may be selected discretely for each program year. The domains selected create the pool of eligible parent domains for all courses associated to that given program.



Program Objectives (graduation requirements) are created at the Program Year; each Program objective may be associated with a specific Competency domain.



Course Objectives are created at the top level of each course, and may be associated with any of the available Program objectives from the Program(s) associated to that course.

Currently, Course objectives may only be associated with a single Program objective in a parent-child relationship. Session learning objectives in turn may be linked to one or more of the objectives in their parent Course, and in turn will inherit the linkage to any program objectives and specific competency domains specified within the pool of eligible program competencies.

When used, the competency and objective tracking system allows for a complete structured tree to be traced back from any specific unit of instruction to include (session)-specific learning objectives, general course objectives, the program objectives toward which they are best directed, and the overarching domains of competency in which all these fall.



While all course level objective information is directly associated with the course, in order to create a direct relationship between a course and a set of associated Competencies (and to have those competencies appear in the course information displayed to Ilios users), you must select a parent association from the available competency domains for one or more of your course objectives.

## Alerts

Ilios is set to notify selected parties when A) they have upcoming teaching responsibilities, and B) there are changes to the schedule or content of curriculum. For all published Calendar offerings, an email reminder is sent to the instructors responsible for that offering 7 days prior to its scheduled start date. The timing of this alert is modifiable in the configuration settings file.

If there is a change to curricular materials after their publication to the calendar, an email notice will be sent to the responsible parties identified by the configurable email list which is managed on a school-by-school basis within the Ilios system. Changes which trigger alerts include:

- *Modification of Date or Time*
- *Modification of Location*
- *Modification of instructors*
- *Modification of content (Learning Materials)*
- *Modification of Course Directors*

Any number of email addresses for each school may be entered into the file for the receipt of change notices. If a school does not wish to send alerts for changes, the configuration may be turned off for that school by leaving the recipient email blank in the configuration file.

Please note: the title header of the email is auto-generated from *the date of the change and the external ID for the course in question*. It is therefore extremely important if you are using this feature to make certain that the external course ID is entered for all courses in your school. The development of an effective work practice around the assignment of, and consistent entry of the external course ID will be a tremendous aid to effective use of the alerts system.

**For instructors and students, a visual alert icon on the calendar will appear when an item on the above list for a scheduled and published session has changed. The icon will remain visible for a set number of days (the number of days may be set in the configurations file, and the default is 7). Custom Reminder Alerts**

Ilios allows for the insertion of custom email templates on a per-school basis for the 7-day teaching reminders. The generic, global template (located in /application/system/alert\_templates is still used by any school which has not provided a custom template.

Custom templates should be placed in the /application/system/alert\_templates/custom/ directory on the Ilios server, and must have the school prefix prepended to the file name, followed by an underscore. The school prefix is found in the SCHOOL table, as the attribute school.template\_prefix (VARCHAR 8), for example:

[the standard global template filename]:  
system/alert\_templates/upcoming\_teaching\_session\_template.txt

[a custom School of Medicine template filename]:  
system/alert\_templates/custom/SOM\_upcoming\_teaching\_session\_template.txt

Custom templates should be saved as a plain text (.txt) file. Once the custom template is placed in the custom directory, it will be used instead of the global template for all reminder notifications sent for the school identified by its prefix.

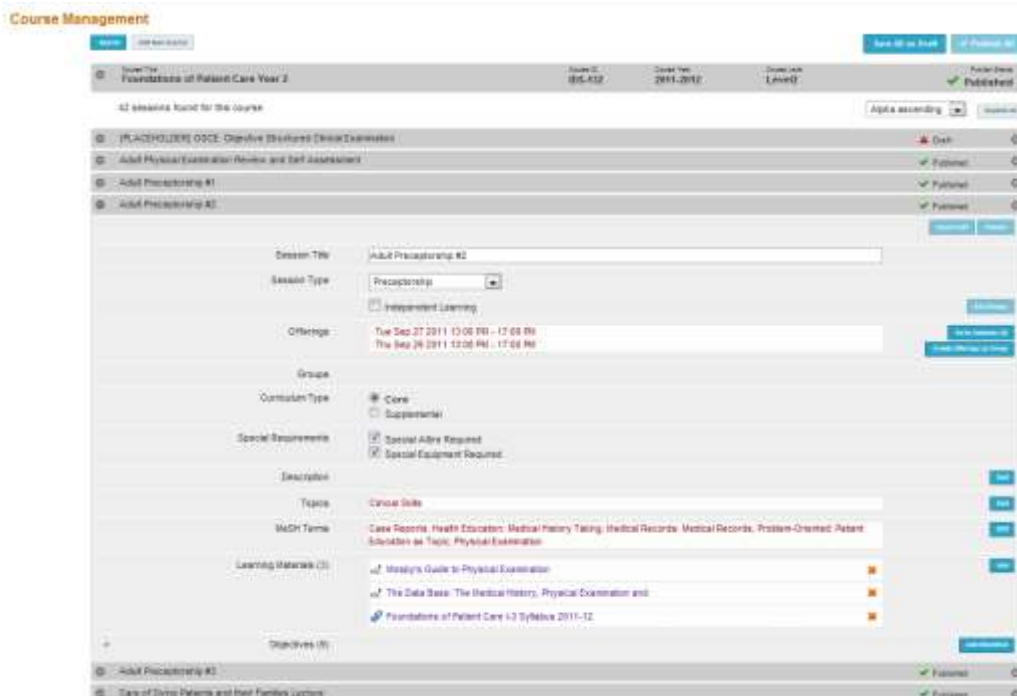
The following dynamic attributes may be plugged into the custom template:

- *User (recipient) Name* [%%RECIPIENT\_NAME%%]
- *School Name* [%%SCHOOL\_NAME%%]
- *Course Title* [%%COURSE\_TITLE%%]
- *Session Title* [%%SESSION\_TITLE%%]
- *Session Type* [%%SESSION\_TYPE%%]
- *Offering Date* [%%OFFERING\_DATE%%]
- *Offering Start Time - End Time* [%%OFFERING\_START\_TIME%%, %%OFFERING\_END\_TIME%%]
- *Offering Location* [%%OFFERING\_LOCATION%%]
- *Associated Learner Groups* [%%STUDENT\_GROUP\_LIST%%]
- *Course Objectives* [%%COURSE\_OBJECTIVE\_LIST%%]
- *Session Teaching Objectives* [%%LEARNING\_OBJECTIVE\_LIST%%]

Dynamic attributes should be formatted as noted above in the parentheses.

## Publishing

Ilios has a built in publishing workflow for curricular material. The publishing workflow serves the purpose of allowing the review of data prior to release, and to provide for the option of release in both interim (“TBD” or “Scheduled”) and final (“Publish”) modes. This is made possible by providing a summary checklist to the user for review. The checklist takes one of three different forms, depending on the workflow chosen: *Course Level Only*, *Single Session Only*, or *Full Course with All Sessions*.



There are 2 different types of data attributes available for checking in the workflow: *required* fields, which must be present for publishing, and if unavailable will make the publish button in the checklist inactive; and *desired* fields, which may be overridden in the checklist, or left as-is without override. If overridden, the course object publishes normally. If left as-is, the course object is published as “TBD”, or “Scheduled” - which reserves space on the calendar for users to see, but does not provide details of the session. Re-publishing a course or session at any time will update the information contained in it to its most recent state. Courses and sessions are independent of one another in the workflow, and can be published individually. A course, as the umbrellas container of its sessions, may also be published together with all of its associated sessions.

In the *Course Level Only* workflow, the top-level (“course-level”) attributes in a course are checked to verify required information. Course level attributes which are checked are:

- **Start Date**
- **End Date**
- **Associated Cohort**
- Topics
- Objectives
- Mesh

The required fields for course are in bold above. The others are desired fields. The absence of one or more of the required fields will disallow publishing or override. The absence of one or more of the desired fields will activate the display of the override checkbox, and be noted by the alert icon on the publishing button.

In the *Single Session Only* workflow, a single session is checked to verify data. Session level attributes checked are:

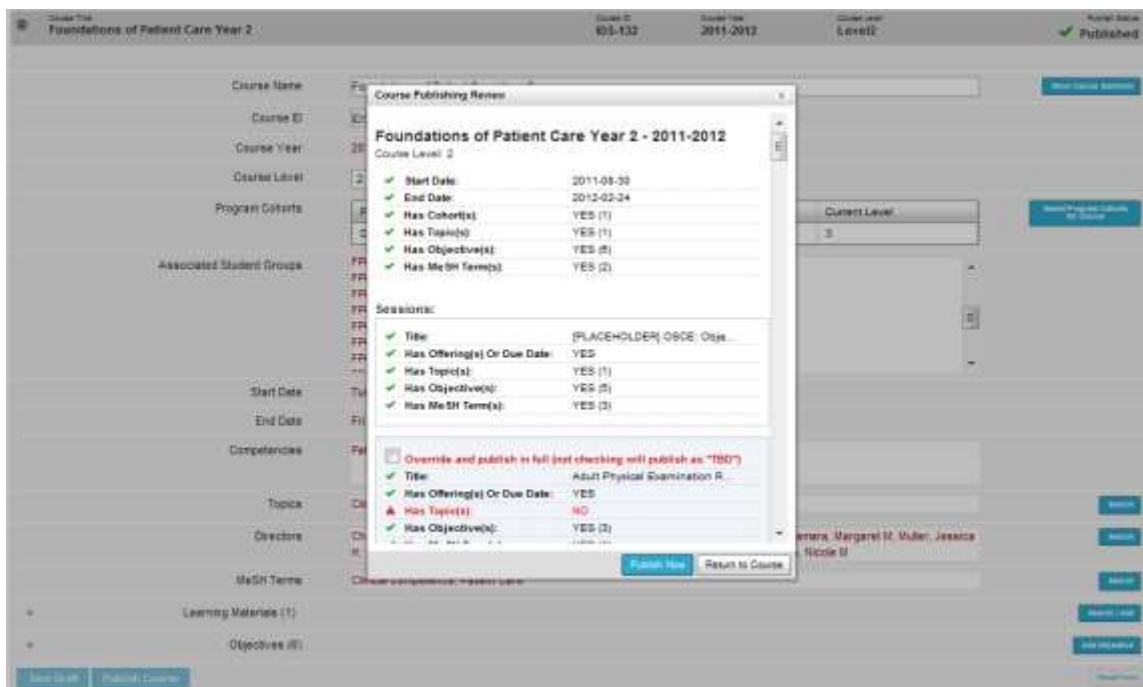
- **Title**
- **Offering / Due Date**
- Topics
- Objectives
- Mesh

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The required fields for session are in bold above. The others are desired fields. The absence of one or more of the required fields will disallow publishing or override. The absence of one or more of the desired fields will activate the display of the override checkbox, and be noted by the alert icon on the publishing button. If all fields are completed, then clicking the “Publish” button will immediately publish the Session, without a review check.



In the Publish *Full Course with All Sessions* workflow, a display of the course level info and every associated session is made available. The course level info and each session function independently as above, allowing override individually. If an associated session was previously in published state, it will still be displayed in the list and allow for republishing following the rules above. Any changes to a previously published session will overwrite its previous status. A course may be in draft, yet have sessions which are published or TBD. The published/TBD sessions will not display on the public calendar until the parent course is in published or TBD state. Draft sessions never display on the public calendar.

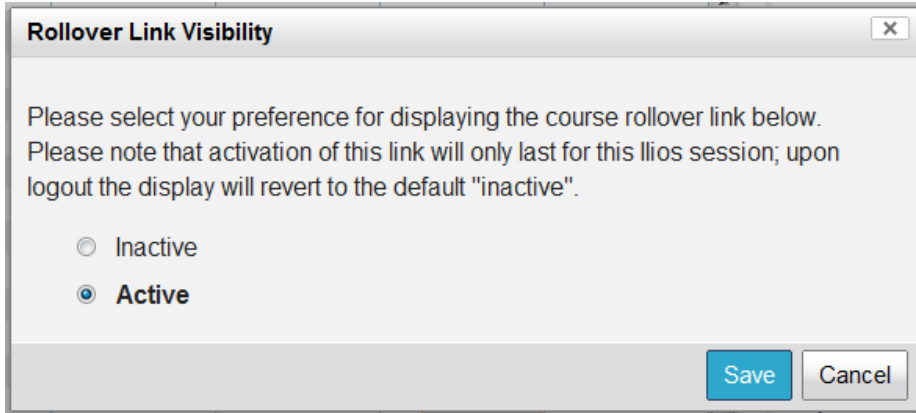


When a course is in TBD state and has sessions in publish state and/or TBD state, those sessions and TBD sessions will display as TBD until the course is published. A published course will display any TBD or published sessions as their state indicates accordingly.

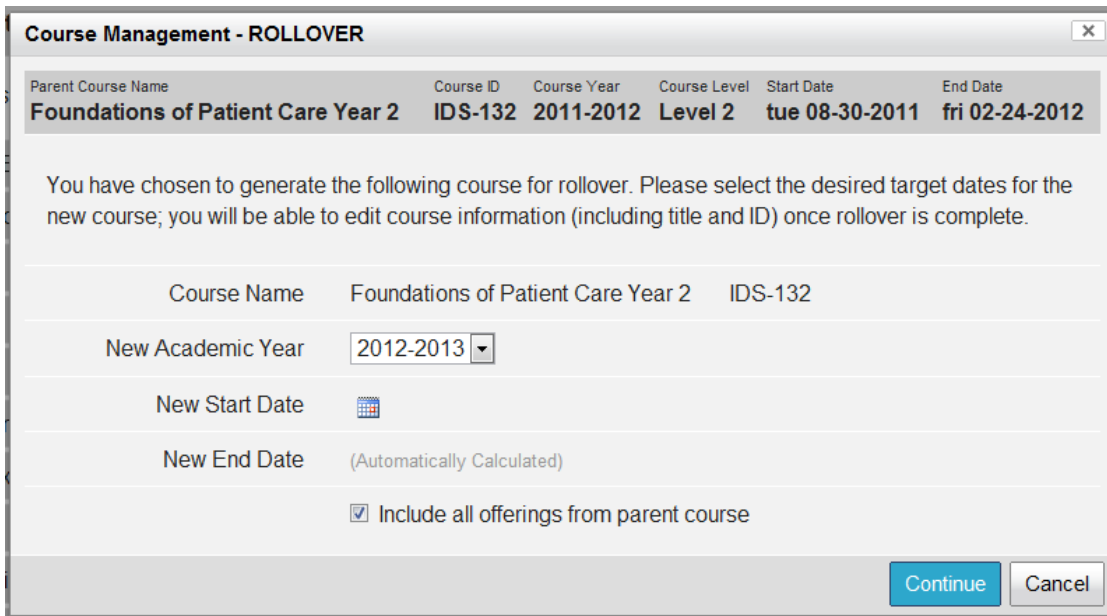
## Administration: Course Cloning & Rollover

Ilios provides administrative users with the ability to clone, or “roll over” any published course for which they have edit permissions. Course rollover takes a complete course and replicates it for a new time period any time after the final date of the original course.

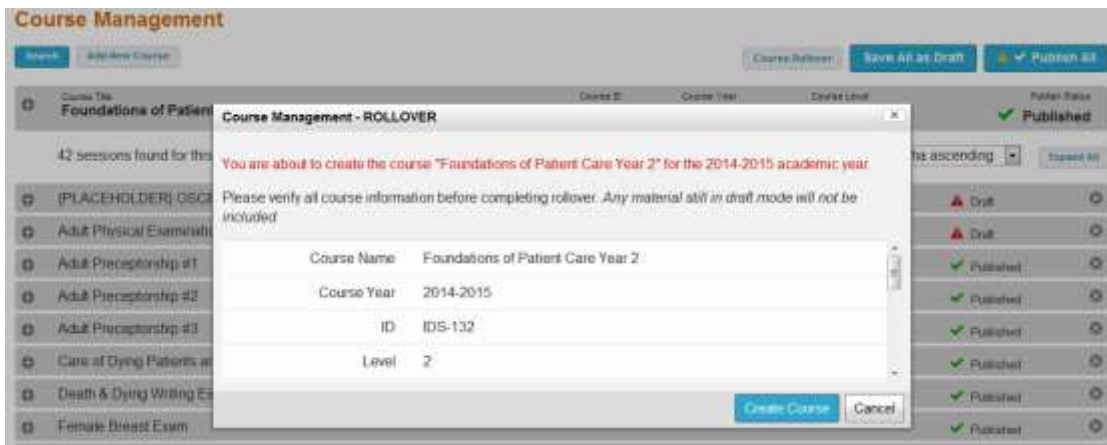
Rollover is activated on a per-session basis via the Administration panel on the dashboard. Once activated, the rollover link to access the tool will appear on all rollover-eligible courses.



In order to rollover a course, the user chooses a target academic year for the new course (the default is the academic year following that of the original course), and a new start date. The target year may be any available academic year, including the current year. *In order to maintain integrity of recurring and regular activities, a course start date must be the same day-of-week in the new course as it was in the parent.* This can always be modified, along with any other information in the course, after the rollover is complete. The weekday on which the parent course begins is noted in the upper right corner of the rollover panel.



A user also has the option of replicating all the scheduled offerings from the original course, and placing them on the calendar for the new course. This is the default option; you may also choose to create the new course without scheduled offerings, retaining only the course and session curricular data.



At this point, the user is presented with the opportunity to review the new course prior to generation. A summary of course level information is provided in the modal panel. Please note that if a course is rolled over into a new academic year (one other than that of the original course), **programs, their associated competencies, and cohort relationships will not be maintained.** *Learner group relationships are never rolled over with course information from one academic year to another.*

For courses cloned into the same academic year as the original course, programs, their associated competencies, and cohort relationships will be maintained and presented in the summary for review. A numeric count of total sessions is also displayed for reference.

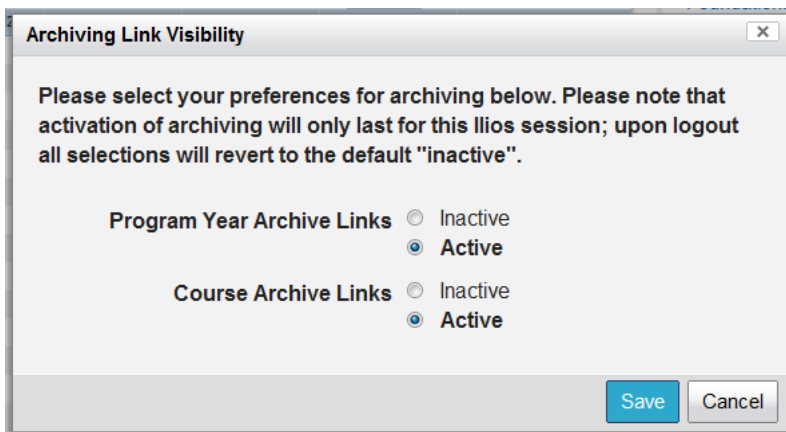
Once generated, a new course is immediately available for management (in draft mode) and re-association to appropriate cohorts, competencies, and all scheduling needs.



**KNOWN ISSUES:** Course rollover calculates all generated dates from the entered start date of the parent course, not the first calendared event. Since there is currently no explicit constraint on start date vs. first offering event (in calendar time) entered for a session, it is important for users to note and correct any discrepancies in those dates. If there is a date mismatch there is a chance that the rolled over offering days will be out of sync with their parent offering days-of-week.

## Administration: Archiving

Ilios provides the ability for two-level archiving of material: locking of course and program information, and filing of program and course information. The archiving functions are activated on a per-session basis, for programs and/or courses, via the archiving link in the Administration console of the dashboard. Once active, links for archiving will appear in the upper right corner of archive-eligible program years and courses.



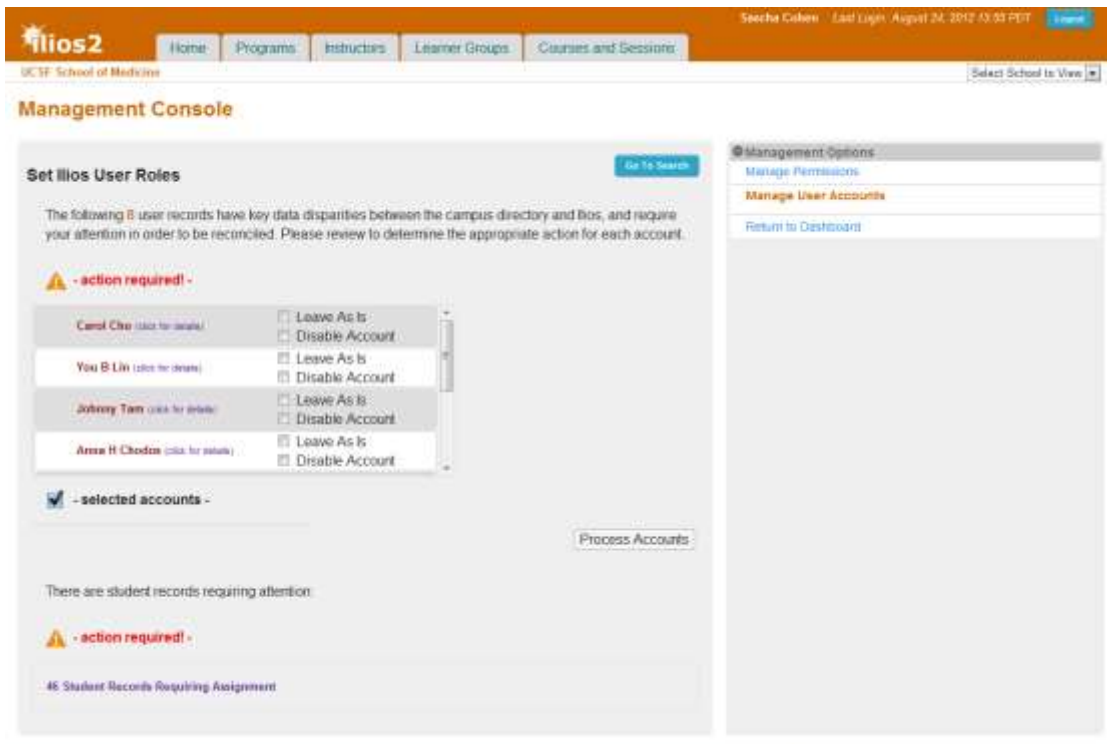
## Locking

Locking a course or program year sets all information within that course or program year to read-only. The material is still available for view and review within the system, but may no longer be modified by users.

## Filing

A course or program year may also be filed once it is locked; filing removes the material from the system interface and lists. It does not remove it from reporting activities or search audits, but only from the visible interface of the Ilios application UI.

## Management Console: User Account and Role Management



Currently, there are two tools available in the Management Console: User Account Management, and Permissions. The default page is User Management, which provides alerts on accounts requiring administrative attention, as well as the default user search link.

### ***A Note on User Roles***

In the current implementation, Ilios provides for four distinct user roles which determine mode of access for a given user, in two broad categories of NON-STUDENTS (those who are not registered as students with the campus registrar) and STUDENTS (those who are). Any user may be assigned any combination of the roles.

### **Non-Students**

1. *Director*. The Director role provides for full editorial access to the system for the primary school of the user. It adds the user as an entity in the Director and Instructor lists for association. In the *user\_role* table of the database, this role is identified with a value of 1.
2. *Developer (aka Administrator)*. The Administrator role provides for full editorial access to the system for the primary school of the user. It does not add the user to any associative lists. Allows for access to the “Management Console” section from the “Administration” module on the dashboard. . In the *user\_role* table of the database, this role is identified with a value of 2.
3. *Instructor*. The Instructor role provides for full editorial access to the system for the primary school of the user. It adds the user as an entity in the Instructor list for association. . In the *user\_role* table of the database, this role is identified with a value of 3.

### **Students**

4. *Student*. The student role allows for the automatic ingestion from an external LDAP directory, and the association to any program cohort. Students may also be assigned additional, non-student roles, but their primary role will remain that of student.. In the *user\_role* table of the database, this role is identified with a value of 4.

The User Account management console feature allows for:

- *The resolution of conflicts between account data in Ilios, and in the campus directory of record;*
- *The assignment of newly entered student accounts to their correct program cohorts;*
- *The disabling of inactive or invalid accounts;*
- *The management of existing accounts and their role assignments;*
- *The creation of new non-student accounts;*

Ilios provides a basic LDAP interface to provide for the ingest and update of users into the system. This can be extended and customized as necessary by your institution. If used, this provides the data of record for all user accounts. For more information, please see the installation notes as well as the Ilios GitHub wiki. Users are defined in two broad groups: **student records** and **non-student records**.

**Student records** are those which are identified in the ingested records as currently enrolled individuals, whether active or not. These records are automatically loaded into Ilios if they are not already present. However, since many external directory systems do not always provide consistent program registration information which conforms to the needs of Ilios, once a student record is ingested it must be manually assigned to its correct program cohort.



This assignment is managed from the alert panel shown. Student records may be assigned individually or in bulk; there is no time constraint on assigning them, but until they are assigned and cleared from the alert panel, the students in question will not have access to their information in Ilios, and will not be tracked as part of the educational hours and activities within the curriculum.

**Non-student** records are those which are valid active records, (i.e. have a valid ID and email), but are not currently noted as enrolled. These records are not automatically ingested, but are reconciled against accounts which have been entered into Ilios already.

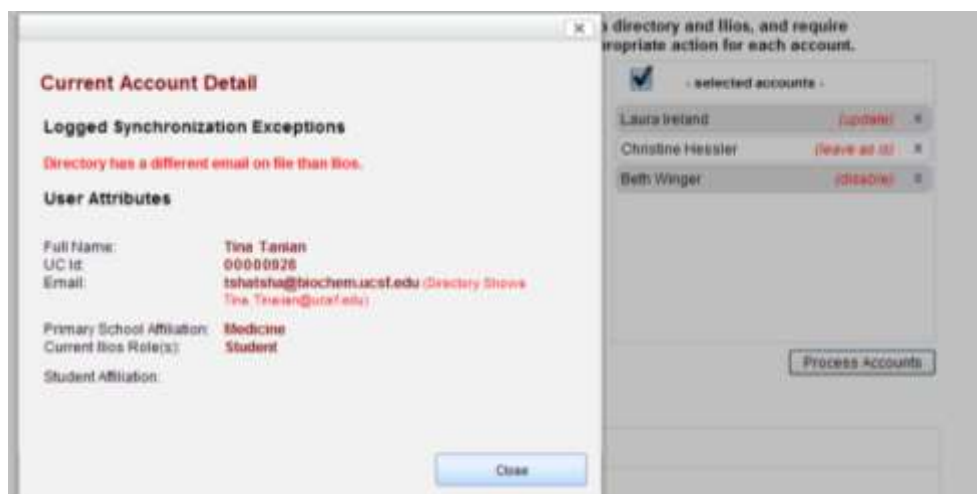
When there is a conflict between an Ilios account record and its parent record in the campus directory, this will appear on the administrators console page. Each record may either be updated --- replacing the conflicting information with the data found in the external directory --- disabled, or ignored until the next ingest cycle. Any record that is found to be in conflict will remain in the alert panel until action is taken.

To manage existing accounts and their roles, go to the Management Console and open the Manage User Accounts link. An alert icon will display on the dashboard when there are accounts awaiting attention. Accounts requiring reconciliation will appear in the top alert panel on the Management console landing page, and students requiring cohort assignment in the bottom alert panel. If there are no items requiring attention, the default page will show the user search panel.

*Note:* When using the search panel, the default view of returned records will be from *all* available records in Ilios, regardless of School affiliation. However, creation of a new record will automatically associate the new record with the primary school affiliation of the current admin user.

### *Resolving account conflicts.*

Accounts which appear to have a conflict with the registered data in the external directory will be listed in the alert panel; each will provide details including what points of data are in conflict.

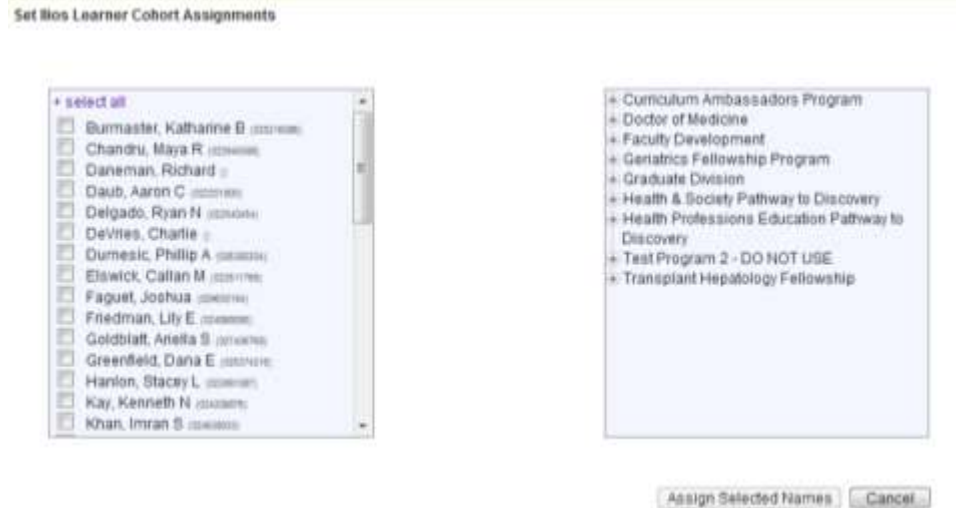


Selecting to *Disable* the account will freeze the account until further action is taken, preventing the user from accessing Ilios and removing them from select lists for further assignment, but will not change the historic Ilios record; selecting to *Update* will update the account with the information in the external directory; Selecting *Leave As Is* will remove the account from the alert list until the next ingest cycle; not selecting an option will leave the account on the alert list, waiting for reconciliation. You may also set an individual account to be ignored by the reconciliation process; this is done on the individual user account detail page by selecting the option of "Exclude this account from synchronization process" (see below).

### *Assigning Student Accounts*

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For institutions running scheduled updates from an LDAP source, when new student records are found, they are immediately ingested into Ilios. The records must be assigned to their program cohorts manually.



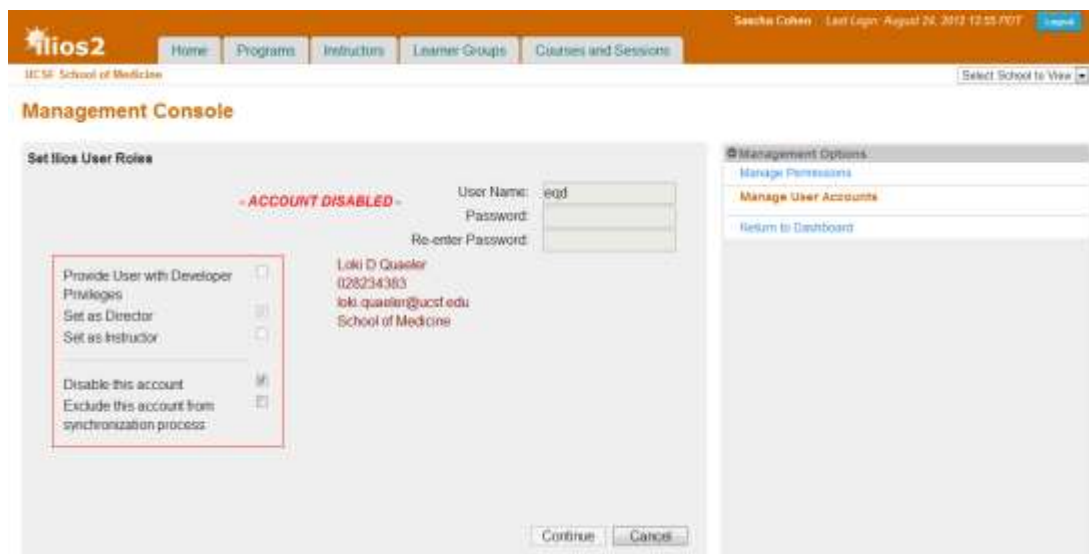
A user will only see those student records for their own primary school affiliation in this list; records for other schools will be ingested, but are only currently manageable by admin users for that specific school. Only student records which have not been entered into Ilios and are unassigned to a specific cohort will appear on this list; if students have been manually entered via the Learner Groups page, the external record will be matched with it.

This assigns students to a “primary” cohort, which will be their parent cohort in the system. Both students and non-students may be assigned into any number of “secondary” cohorts as described below.

### *Disabling Accounts*

The “disabling” of an account is blocking the user’s access to Ilios. This means that a user who has been disabled will no longer be able to log in to the system, and instead will be alerted that their account has been disabled, and to contact the Ilios administrator for assistance. This is the default state for newly ingested student records until they have been assigned to a cohort. For Instructor and Director records, they will also be removed from the current selection lists in the system.

To disable an existing Ilios Account, search for the user account in question, and select them from the results list. From the available roles, choose “disable this account” and click continue. The account is now disabled and the user has only read-only access to Ilios.



Similarly, for managing existing account roles, simply find the desired account, select the desired active roles for the user in question and click continue.

*Ignoring Accounts for Directory ingest and reconciliation*

An account may be set to be ignored by the reconciliation with external directory information; this provides for avoiding repeating alerts on accounts that may have information which is unavailable to the campus system, or which are specific to Ilios for any reason. Clicking the box labeled “Exclude this account from synchronization process” will set the account to be ignored by the process.

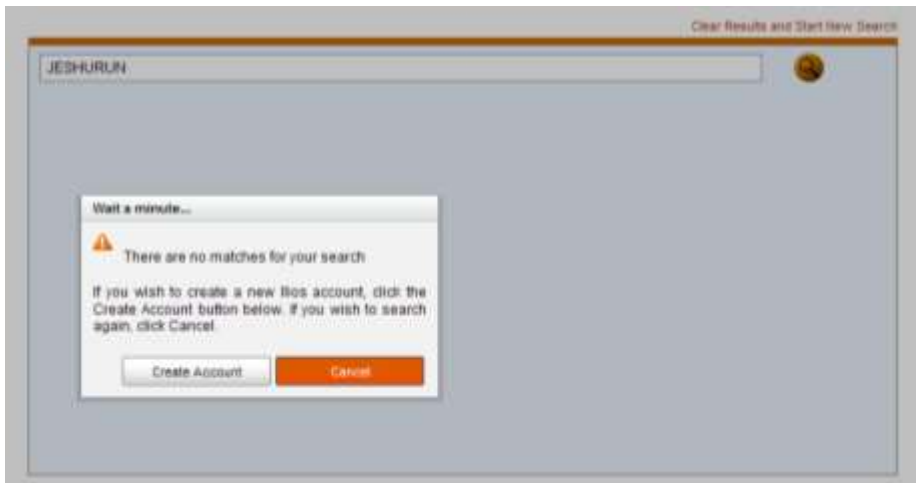
*Account Creation.*

There are two methods of creating a user in Ilios: via the Management console, or via csv file upload. To upload a csv list of instructors, go to the Instructor Groups page, create or open a group, and click on the “add new” button. To upload a csv list of students, go to the Learner Groups page, create or open a group, and click on the “add new” button. Please note that inputs must be formatted exactly as described, without any headers, and will not allow the upload of duplicate records. Each row in the csv must be as follows:

*Last name, First name, Middle name, Phone, Email, UC ID, Galen ID, Other ID*

Once uploaded, the users listed will be added to the instructor group or learner cohort in which you are working.

The other, preferred method of creating users in Ilios is to use the Management console search tool. When a search for a user is run, if no results are found in Ilios, the user is presented with the opportunity to create a new Ilios account.



Selecting “Create Account” will bring up the template for entering a new account: The required fields are name, UCID, and email. These must match the official records in the directory for accuracy. Note that if internal authentication is not active, the username and password fields are disabled; these are only for use in situations where Ilios native authentication, rather than shibboleth, is in use.

Please note that only non-student accounts may be created here. The account may later be associated with a learner record via external directory reconciliation as described above, but in general student accounts should only be entered into Ilios via external directory feed or via the Learner Groups page.

There are three basic non-student roles available for assignment in Ilios: *Developer*, *Director*, and *Instructor*.

Assigning *Developer* privileges allows the user full editorial access to data for their primary school, but does not associate them with the curricular selection lists.

Assigning the role of *Director* will add the user to the select lists for Course and Program Directors and Instructors, and provide them editorial access to any material to which they are associated.

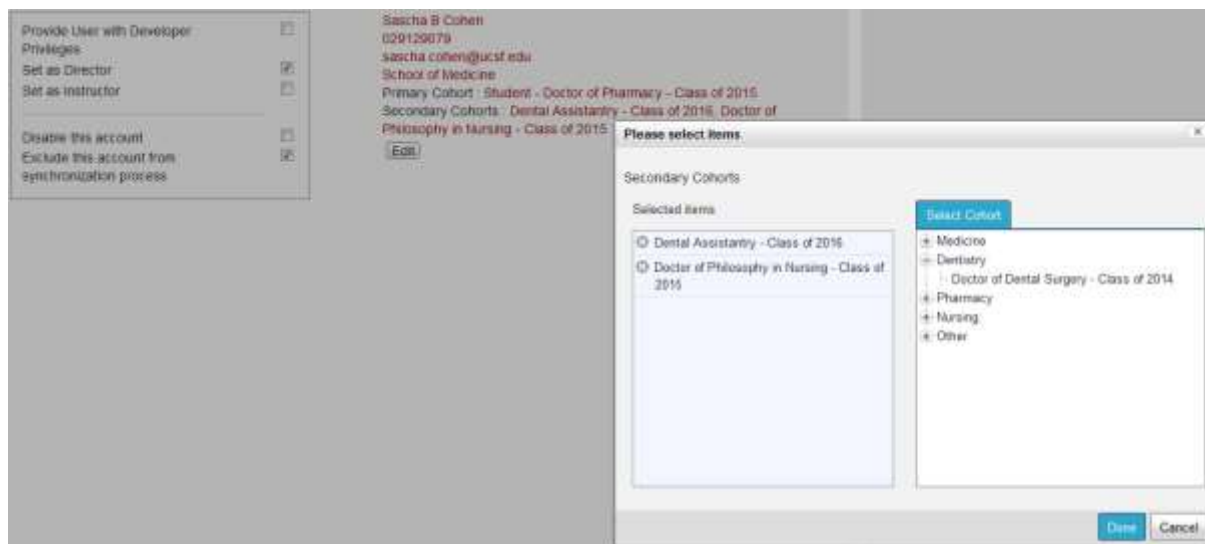
Assigning the role of *Instructor* will add the user to the select lists for Instructors, and provide them editorial access to any material to which they are associated.

Leaving a user without a role assignment provides them view access only; this is the default for student users ingested into the system.

If synchronizing with an external directory, user accounts will be checked against that store on a scheduled basis. To remove an individual account from that check, you may check the “Exclude this account from the synchronization process” box. The user account will then be ignored in checking for external changes or updates.

## Cohort Assignment

Both students and non-students may be assigned into any number of “secondary” cohorts. Students may be assigned to secondary cohorts whether or not assigned to a primary cohort. Secondary cohorts may be selected from any active program in any active school. Once assigned to a secondary cohort, a user may be managed in that cohorts groups as would any learner.



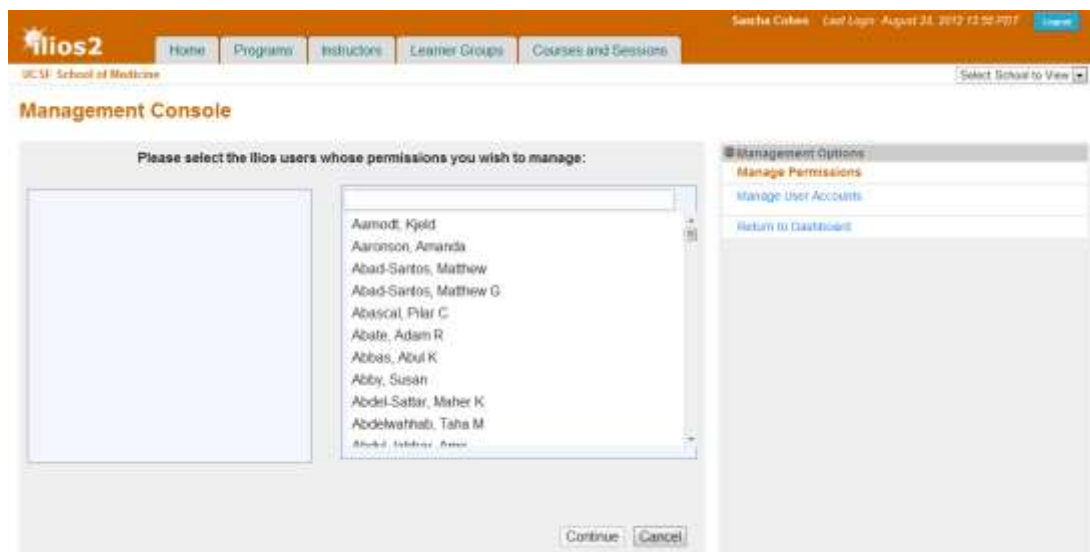
To assign a user a secondary cohort, click the “edit” button beneath the user cohort information listing on their account information page. Select any available program cohort from the list provided in the picker, and save. The assignment will now be shown on the user’s page.

## Management Console: Access Control and Permissions

Ilios provides a management interface to allow for the simple control of edit - level permissions for existing users and their access to curricular data. Combined with the option of joint program stewardship, these permissions provide an extremely powerful mechanism for creating and deploying interdisciplinary curricula.

By default, any existing user associated at Director-level with a Program or course will automatically have edit privileges for that Program or Course. To assign others edit privileges (course admins, developers, instructors, etc.), the Management Console should be opened. It is accessed by clicking on the “Open Management Console” link in the Administration section of the Dashboard. Only users assigned admin control for the system may access the console.

Clicking on the Manage Permissions link will bring up a select box of *all* Ilios users, regardless of school association. You may select one or more users for permissions management.



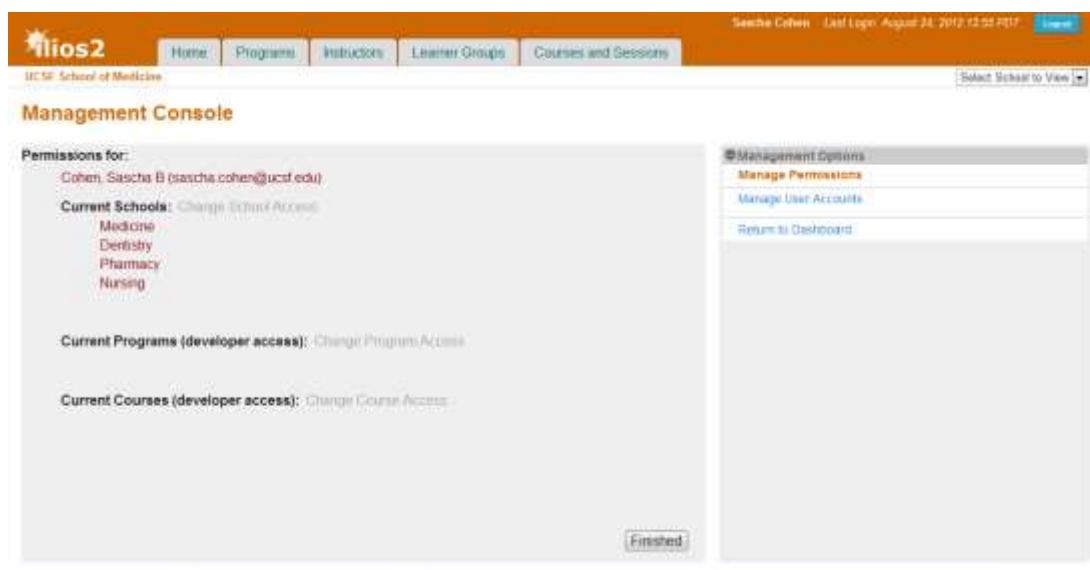
Selecting one user will return a display of that user’s current access permissions to Schools, Programs and Courses.

*Current Schools.* This provides access to the curricula for multiple schools in an institutional deployment of Ilios. Roles and access levels are carried over from school to school for any given user.

*Current Programs.* Provides explicit admin access to the Programs listed, regardless of role or access level.

*Current Courses.* Provides explicit admin access to the Courses listed, regardless of role or access level.

Selecting the appropriate link will allow for the addition/removal of items from their access list. Assignment is immediate upon display of the course or program in the access lists. You may only modify one category of permissions at a time. To modify additional permissions, save your selection(s) and return to the permissions selection screen.



Only Programs and Courses for the current School being accessed by the admin user will be available for assignment.

Selecting more than one user will allow for the bulk assignment of permissions. When setting permissions for multiple users, please note:

- Only access permission may be granted. In order to remove access permission, you must access an individual user.
- If any permissions exist for any of the selected users in association with the selected Course or Program, they will be overwritten by the new assignment.

Assignment is immediate upon display of the course or program in the access lists.

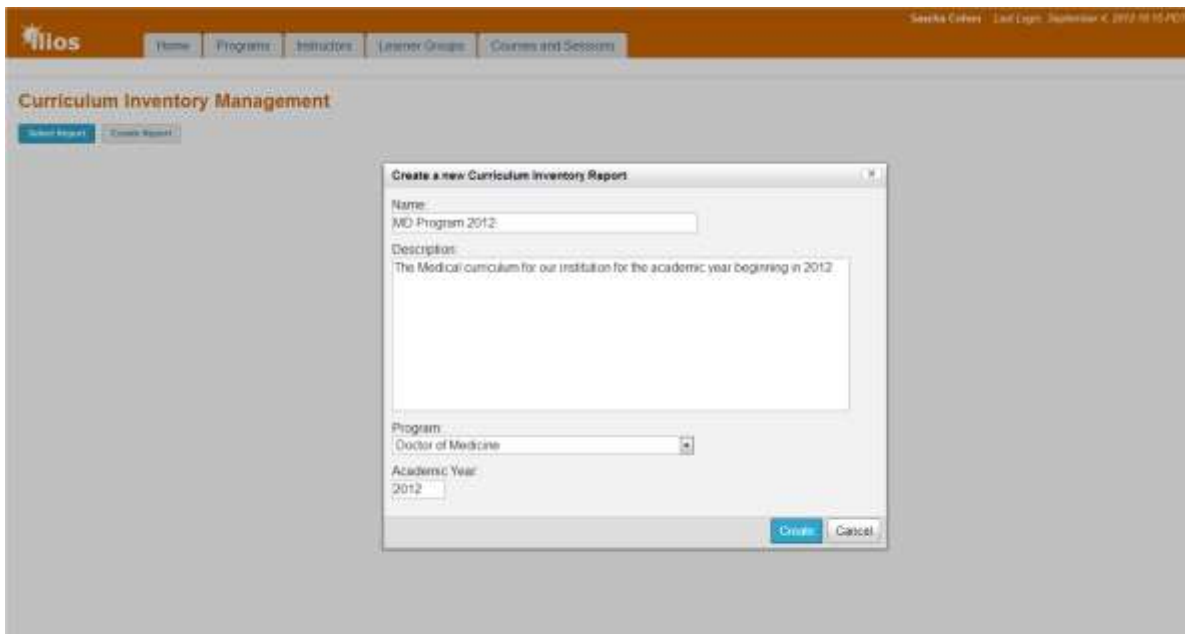
Clicking the “Finish” button returns the user to the main Management Console Menu display.

## Working With the Curriculum Inventory Manager

The Curriculum Inventory Manager is a new tool available with Ilios release version 2.3. It is designed to allow Ilios users to craft standards-compliant xml output reports for the AAMC’s new Curriculum Inventory, as well as to provide a platform for modeling new frameworks for the curricula held in Ilios.

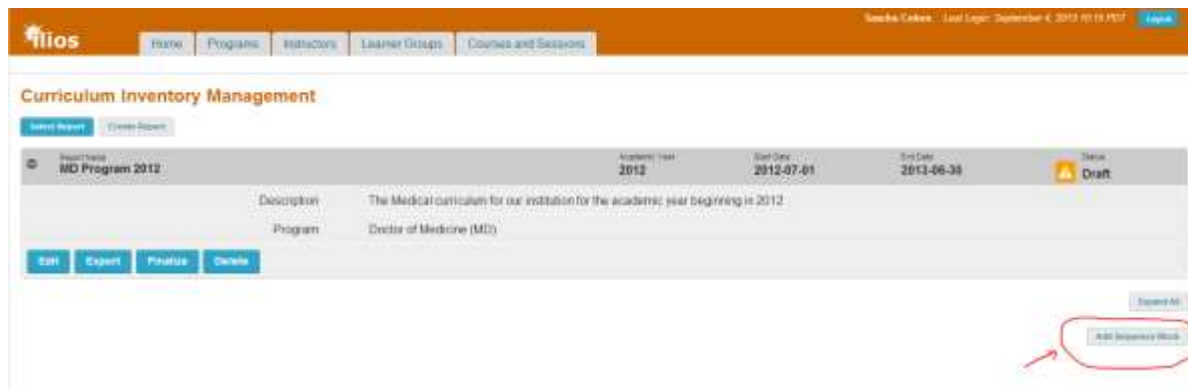
Access to the CI Manager is restricted to Course Directors and those users given “developer” role privileges.

In this first iteration, the tools allow for the basic construction of curriculum blocks (“sequence blocks”) and their appropriate population with course and other data. Usage follows the model found in program, course, and group management.



It is important to note that all fields in the UI forms are mandatory; there are no fields presented to the user which are not explicitly called for by the specification and standard. For further details on the various attributes available to the CI, please see the detailed information and examples provided by the AAMC at <https://www.aamc.org/initiatives/cir/>, as well as the Medbqitous standards information at <http://bit.ly/1dPMh8e>, or contact the AAMC for additional information.

Reports may be created, edited and/or deleted up until they are “finalized”. Selecting the finalize button saves the report to the database as part of the historical record.



Only one report for each year of each program may be in place at any time; this includes finalized reports.

The export created by the report is compliant with the Medbiquitous standards and the AAMC inventory business rules. Once generated it may be delivered directly to the AAMC for input into the CI and MedAPS system.



When building the report, each “block” of the curriculum, regardless of whether it is a track, a set of courses, or a single course, is created as a “sequence block”. Sequence blocks may be nested at any level, so you can put blocks within blocks (within blocks), and so on, as shown below.





Any number of levels may be nested; it is important to note that the highest level block must be created first, as this iteration does not allow for the moving or shifting of blocks from one container to another or one level to another.

It is strongly recommended that the structure of your report is well defined prior to creating it in Ilios; this will facilitate the process of modeling your high level tracks, blocks, and nested sequences.

Note that in the current iteration, it is necessary to create the highest level block in a nested set first, and work down. So in the case of complex parallel and intersecting longitudinal curricular mappings, the topmost container (or curricular title or structure) should be created as your first sequence block. For example, for a block of 1<sup>st</sup> and 2<sup>nd</sup> year courses associated together as “Essential Core”, which include 5 major course blocks, as well as a parallel longitudinal program for Foundations of Care, you would first create a block called “Essential Core”, and then within it nest 5 ordered blocks - one for each course --- and then an additional parallel block for Foundations of Care.

Once a report is created in draft form, it becomes available in the “select report” list which appears when clicking the “select report” button at the top left of the screen. Reports may be edited at any time until they are finalized. Once finalized, they may not be modified, and changes to the existing active curriculum or Ilios data will not modify their contents.

## Calendar Embed for 3<sup>rd</sup> Party Applications

In many cases, it will be desirable to have access to Ilios calendar and learning material information within an external system, such as an LMS. To facilitate this, we provide a controller which may be called from an external authenticated source location, and will present a calendar view within an iframe in that environment.

The Ilios code is contained in the *Calendar\_Controller.php* file, and we have also released a moodle code block to allow for this feature to be used at institutions using moodle 1.9.x.

### UCSF ONLY: Auto-Enrollment for CLE-Enabled Courses

Ilios now allows for the direct enrollment to online courses in the CLE. Please note: *The use of the Ilios enrollment system cannot be combined with the other automated enrollments available to the CLE at UCSF.* If your course is currently using the CLEAE/SIS enrollment, it cannot also use Ilios as the enrollment source of record. If your course is using the manual spreadsheet load for enrollment, it cannot also use Ilios as the enrollment source of record. These methods are all mutually exclusive.

Regardless of which auto-enrollment method is in use, manual *additions* to the enrollment may always be made directly to the online course (in moodle), as is now the case. Removals of auto-enrolled individuals must occur in the source of record for the enrollment (i.e., within Ilios).

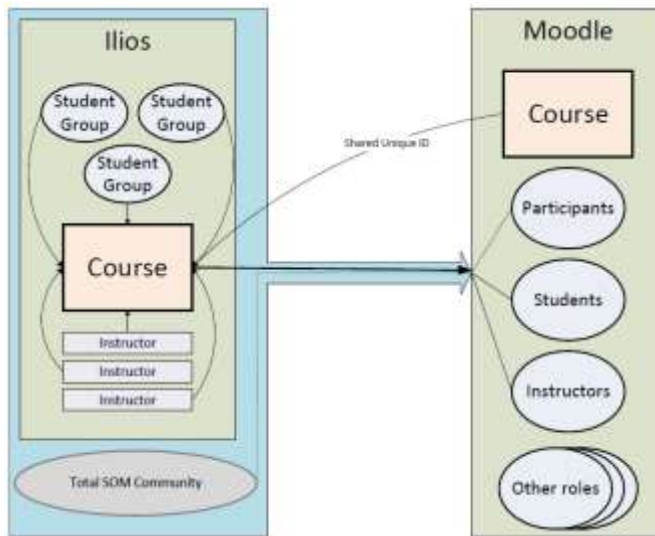
There are two modes of enrollment currently available, which are configured on a school-by-school basis.

The standard mode:

ILIOS	Enrolls into	MOODLE
Ilios learner record associated with the Ilios course	→	moodle student role for the selected course
Ilios instructor record associated with the Ilios course	→	moodle instructor role for the selected course

The alternate mode (used by SOM):

ILIOS	Enrolls into	MOODLE
All Ilios records associated with the selected school's curriculum	→	moodle participant role for the selected course
Ilios learner record associated with the Ilios course	→	moodle student role for the selected course



To create the connection,

1. Select and copy the generated course ID from your Ilios course, displayed in red directly below the input field for course external ID:

The screenshot shows the Ilios course settings for 'Foundations of Patient Care Year 2'. The 'Course ID' field contains 'FPC2\_12-13' and 'ILIOSC0YF4', with the latter highlighted in red. Other fields include 'Course Name', 'Course Year', 'Course Level', and 'Program Cohorts'.

Course Name	Foundations of Patient Care Year 2
Course ID	FPC2_12-13 ILIOSC0YF4
Course Year	2012-2013
Course Level	2
Program Cohorts	
Program Title	Doctor of Medicine
Cohort	Class of 2015

2. Paste this ID into the settings field in the corresponding moodle course, and save.

UCSF-OLE > EPI > Edit course settings

The screenshot shows the Moodle 'Edit course settings' page. The 'Course ID number' field is highlighted in red and contains 'ILOS0YF4'. Other fields include 'Category', 'Full name', 'Short name', 'Summary', and 'Format'.

Enrollment is updated nightly. Any modifications made in Ilios to either student or instructor associations will be reflected in the enrollments updates for that night. Please note that enrollment is only captured for published courses.