

Ilios v3

Curriculum Management from UCSF

Overview

The Ilios Curriculum Management System provides a user-friendly, flexible, and robust web application to collect, manage, analyze and deliver curricular information for higher education institutions around the world.

Built in collaboration with and for the health professions, Ilios supports the sharing of curriculum and materials among programs, departments, schools and institutions, while maintaining the flexibility to accommodate the unique practices within the diverse health professions community.

Ilios v3 is a complete re-write of Ilios from a classic web application to an “API first” technology platform with an accompanying frontend single-page application.

Ilios v3 is built upon the latest web technologies, leveraging broad community input and collaboration for rapid iteration and release of new features through continuous deployment and delivery.

Ilios v3 meets the rapidly changing needs and aspirational educational goals of the UCSF and UCI schools of Medicine, as well as the growing demands of academic health education worldwide.

“I use Ilios daily; it is the cornerstone of our curriculum management. It has streamlined our processes and workflows and has resulted in significant time-savings. But perhaps more importantly, it provides us with both robust curricular data and a user-centered calendar. It also interfaces with our school’s Moodle instance, providing us with further efficiencies. It contains many robust features and a smooth UI. I can’t imagine how I would do my job without it!”

- Valentina B.

<https://iliosproject.org>

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Milestones

Summer 2014

Planning and technology selection, first commits for new frontend and backend code.

Spring 2015

REST / JSON API completed.

Summer 2015

First beta versions released for feedback from community and constituents.

December 2015

Ilios 3.0.0 released and deployed at UCSF.

Our Motives

The re-write of Ilios was motivated by several immediate and competing needs:

- With the rapidly shifting models in medical education over the last decade, the existing application was no longer able to address the changing needs of the UCSF educational mission.
- Movement toward competency-based models of learning delivery, introduction of greater complexity (such as earlier clinical exposure within medical education), and the increasing demands of accreditation have demanded a response that would include adherence to new national standards and the flexibility to grow with the changes in our local curricula.
- The contemporary technology landscape has raised the expectations of the Ilios user audience to include a modern look, feel, and performance in an application that can easily communicate with external systems using industry-standard methodologies.

What does our Success look like?

Ilios has been modernized into an extensible platform, providing our users with:

- Fully tested codebase, allowing for rapid iteration and deployment to quickly respond and adapt to new and changing user requirements.
- Conformance to published ANSI/MEDBIQ international data standards in order to provide a streamlined process for reporting and accreditation needs.
- API to allow interoperability with other campus systems.
- Minimal modification of the existing database to provide the least disruption to business and user data access for schools migrating from previous versions of Ilios.
- Enhanced ability to support customers at UC and abroad.

Why This Matters:

INNOVATION:

- API-first design:
 - Leading edge of contemporary web architecture and design.
 - Easy interoperability between heterogeneous systems, schools, and organizations.
 - Continuous integration, testing, deployment and updates:
 - New features and bug fixes can be sent to every user at every campus in real time, regardless of resource constraints, access to IT support, or conflicts with student activities or school events.
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POTENTIAL FOR BROAD CHANGE

- Mapping tools empower curriculum enhancement and improvement by providing a clear and structured tool to analyze, visualize, and map the curriculum. This is a critical and foundational piece in the effort to transform educational process and improve outcomes.
- Flexible, standard tool breaks down boundaries between campuses and accrediting organizations, further promoting interprofessional education growth and improvement.
- Encourages collaboration and educational-sharing and transformation beyond the traditional boundaries of department, discipline, school, and campus. This enhances the interprofessional educational mission shared across schools by providing a platform for IPE and shared curricula.
- The Curriculum Inventory project, launched by the AAMC for North American Medical schools in 2013, is a key feature of Ilios. The system allows for broadly flexible modeling of program and instructional data, while remaining in conformance with the published international curriculum inventory standard.

COLLABORATION

- UCSF Library Center for Knowledge Management (CKM) + UCSF School of Medicine
 - Collaboration between the UCSF School of Medicine and the UCSF Library CKM has allowed Ilios to be built and maintained continuously through leadership and organizational changes.
- UCSF Schools of Medicine + Dentistry + Pharmacy
 - With the Schools of Dentistry and Pharmacy joining Medicine on the project, we have been able to deliver truly interprofessional curriculum management and mapping.
- UCSF + UC Irvine
 - Provides an opportunity to build a platform for shared innovation, application support, and system hosting, lowering the overall costs for all campuses involved.
 - Broadens the scope of Ilios through mapping of multiple disparate curricula.
 - Helps facilitate the sharing and comparing of curricula across UC campuses.
- UCSF + THE WORLD!
 - Adoption by dozens of institutions across 4 continents broadens the pool of potential contributors and partners.
 - Globally adoptable and accessible via translations in English, Spanish, and French, with the ability to easily add other languages.
 - Drives conversations around curriculum-mapping and management globally within the AAMC, AMEE, and other medical education organizations and the industry as a whole.
- Open Source Software (OSS) + well-known technologies
 - Lowers the cost of adoption and contribution.

- Increases confidence for campuses through transparency, visibility, ownership of source code, documentation, and process.
- Being developed as an OSS project that leverages modern technologies and standards drives growth of adoption by users and developers globally.

IMPROVED EFFICIENCY AND USABILITY

- Improved User Experience (UX) + User Interface (UI) through *deep user research*
 - Single Page Application architecture has been rigorously modeled against the input of three rounds of user research over 24 months, resulting in a UI designed to accommodate feedback and processes.
- Enhanced exposure and transparency of data
 - Exponentially more data is now exposed to the user at-a-glance; additional context allows for better-informed management of data.
- Improved iconography and internationalization (I18n)
 - Improved iconography replaces text, color labels and instructions providing for improved usability and accessibility.
 - Enhanced language translation / localization tools allowing for easier adoption by non-English speakers and accessibility-challenged users.
- Streamlined process improves ease and quality of reporting and accreditation.

SHARED INTEROPERABILITY

- Well documented REST API
- Easily configurable, standards-based authentication technology (LDAP, Shibboleth, and others)
- Clear and easy documentation of the upgrade path from previous major version.

Ilios Community Institutions:

- | | |
|---|--|
| • UCSF School of Medicine | • Dartmouth Geisel School of Medicine |
| • UCSF School of Pharmacy | • LSU |
| • UCSF School of Dentistry | • SUNY Downstate |
| • UCI School of Medicine | • Stanford Medical School |
| • USUHS | • American University of the Caribbean (St. Marks) |
| • University of Michigan Medical School | • Karolinska Institutet |
| • Wayne State | • Monash University School of Pharmacy |
| • OHSU | • Monash University School of Dentistry |
| • Tulane | • Vanderbilt University |
| • USF (Florida) Health Sciences Center | |
| • Texas Tech UHSC | |

Links:

Ilios Project Website: <https://www.iliosproject.org>

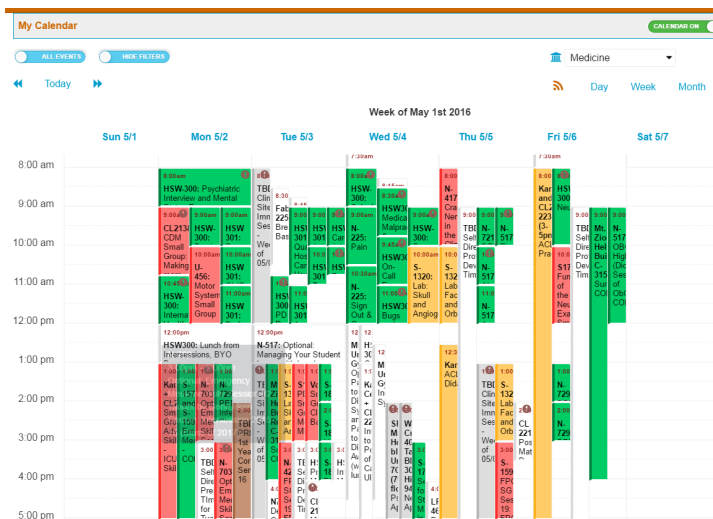
The Ilios Wiki: <https://github.com/ilios/ilios/wiki>

Ilios Code Repositories: <https://github.com/ilios>

Ilios Code Downloads: <https://github.com/ilios/ilios/releases/latest>

Ilios Online User Guides: <https://www.gitbook.com/@iliosproject/>

Screenshots:



The screenshot shows the 'Brain, Mind, and Behavior 2015-2016' course overview page. The course ID is IDS 104 14-15, the clerkship type is 'Not a Clerkship', and the level is 1. The start date is 04/22/16 and the end date is 06/21/16. The universal locator is ILIOS812. The directors listed are Juan B. Bowman, Jesse E. Castillo, Jean M. Duncan, Philip R. Harvey, Kenneth R. Larson, and Matthew P. Ruiz. The sessions list includes:

Title [2]	Type	Groups	First Offering	Offerings	Status	Actions
Alternative Treatments and Flipped Classroom II for Psychiatry and Pharmacology	Patient Presentation - Faculty	2	06/09/2016 10:00am	1	Published	[Icon]
Anatomy Practical Exam	Practical (Lab) Exam	1	05/16/2016 1:00pm	1	Published	[Icon]
Anatomy Review Small Group	Tutorial	12	05/13/2016 11:00am	12	Published	[Icon]
Anesthesia Simulator	Simulation	18	06/07/2016 12:30pm	18	Published	[Icon]
Antidepressant Drugs (Video Lesson: view by 5/22/2016)	Lecture	1	ILM: Due By 05/22/2016	1	Published	[Icon]

The screenshot shows the 'Schools' page for the 'Medicine' department. It lists competencies and vocabularies:

Competencies (29)	Domain	Summary
	Interpersonal & Communication skills	There are 3 competencies
	Medical Knowledge	There are 4 competencies
	Patient Care	There are 6 competencies
	Practice-Based Learning & Improvement	There are 3 competencies
	Professionalism	There are 5 competencies
	Systems-Based Practice	There are 2 competencies

Vocabularies (3)	Vocabulary	Summary
	Resource Types	There are 27 terms
	Topics	There are 70 terms
	UCSF 49	There are 213 terms

The screenshot shows the 'Courses' page for the 'Medicine' department. It lists various courses with details like school, year, level, start date, end date, status, and actions:

Course	School	Year	Level	Start Date	End Date	Status	Actions
Anesthesia 110 Core Clerkship (2015-16) (Anesthesia110_2015)	Medicine	2015 - 2016	3	06/22/15	06/14/15	Published	[Icon]
Brain, Mind, and Behavior 2015-16 (IDS 104 14-15)	Medicine	2015 - 2016	1	04/22/16	06/21/16	Published	[Icon]
Class of 2019 (Class of 2019)	Medicine	2015 - 2016	1	08/31/15	07/31/19	Published	[Icon]
Coda (2016) (Coda 2016)	Medicine	2015 - 2016	4	04/25/16	05/13/16	Published	[Icon]
Curriculum Ambassadors (2015) (CurriculumAmbassa)	Medicine	2015 - 2016	1	06/28/15	10/10/15	Published	[Icon]
EEM Office Hours	Medicine	2015 - 2016	1	09/01/15	12/14/15	Not Published	[Icon]
Family and Community Medicine 110 Core Clerkship (2015-16) (FamilyMed110_2015)	Medicine	2015 - 2016	3	06/20/15	09/30/15	Published	[Icon]