Sautter Award Nomination

Project Title

Instructional Planning & Administration (IPA)

Submitters

Meshell Louderman, Chief Administrative Officer, Department of Computer Science

Tracy Lade, Chief Administrative Officer, Department of Physics

Jessica Potts, Chief Administrative Officer, Department of Chemistry

Jeremy Phillips, IT Director, Division of Social Sciences

Names of project leader(s) and team members

Christopher Thielen, Lead Application Developer

Lloyd Wheeler, Application Developer

Project highlights

- Instructional Planning and Administration (IPA) fills major gaps in the functionality of most student information systems.
- IPA addresses the complex, labor-intensive business processes between faculty, departmental staff, and the Registrar.
- IPA helps departments and campuses to make smarter, data-driven decisions on which courses to offer and when to offer them to meet the needs of our students.
- IPA is currently used across 61 academic subjects to schedule more than 3,000 courses at UC Davis, and new departments are signing on weekly.
- IPA integrates with the Ellucian Banner SIS used at many UC campuses and at hundreds of external institutions, and other UC campuses have expressed interest in piloting.
- Ellucian does not offer a product in this space, so IPA has commercial product potential.

Project narrative

Academic course scheduling is a complex and labor-intensive set of business processes and highly varied across departments, even within the same college. The business processes include:

- faculty and administrative staff collaborating to decide which courses will be offered in a given year,
- collection of faculty teaching preferences and assignment of courses to individual faculty members,
- collaborating with the Office of the University Registrar (Registrar) to schedule specific times and rooms for courses,
- collection of availability and faculty preferences for teaching assistants, readers, and other instructional support personnel and assignment of those personnel to courses,

- budgeting for instructional support, and
- analytics of enrollment demand and trends to drive the scheduling process and ensure that the needs of our students are met.

At UC Davis, these processes are centered in individual academic departments, though the Registrar and our BANNER-based student information system (SIS) dictate some aspects. Because of both this highly distributed model and true differences in the needs of departments, departments implement these processes very differently.

One large department tracked the number of emails between their primary course scheduler, individual faculty and instructional support personnel, and the Registrar's office at more than 1,000 per quarter—meaning more than 3,000 in a single year. That easily represents over $10k in faculty and staff time per year for one department and significantly more when applied across campus.

The Administrative Managers (ADMAN) group, composed of department managers from across the UC Davis campus, identified this set of business processes as expensive, time consuming, inconsistent, and in need of automation.

The departments within the Division of Social Sciences also identified the instructional planning processes as a high priority for business process automation.

Recognizing both the local and wider campus need, the Division of Social Sciences application development team took on the challenge.

The team cast a wide net by collaborating with ADMAN to create a steering committee with representatives from departments in each of the UC Davis colleges and schools and the Office of the Registrar.

This model enabled the team to build a tool that is now being used to schedule more than 3,000 courses across 61 academic subjects, with more departments signing on weekly.

Working with the steering committee, the project team developed high-level goals for the project:

- Allow the process stakeholders to manage and facilitate the instructional planning process in a more streamlined, structured, and consistent way to ensure optimal planning activities and effective utilization of campus resources.

- Integrate into other campus source systems to minimize manual data entry, data quality issues, and lack of informational needs being met.

- Strategically meet the needs of the Faculty and Student constituents within the instructional planning process while empowering the Academic/Administrative Coordinator (Administrative Coordinator) and supporting campus unit process owners to administer the process in the most efficient way.

The development them then created a tool that meets these goals by:

- Streamlining the instructional planning process by dramatically reduced the number of manual, email-based interactions between faculty and staff participants in the scheduling process.

- Improving the quality of scheduling decisions by providing timely current and historical enrollment data in an easy to understand format, and reduced error rates due to manual data entry.
- Simplifying the interactions needed from faculty and instructional support personnel to support the planning and scheduling process.

Representatives from departments that have used the system have provided very positive feedback on the system and the development team:

> "They have taken the time to understand our needs and make adjustments to the system accordingly. They have been creative in finding ways to meet our needs while not making the system too clunky and cumbersome to use. They are amazing in that they've been able to accommodate so many different needs and wants from a diverse pool of customers. Their hard work definitely needs to be acknowledged." -Meshell Louderman, Management Services Officer for the Department of Computer Science in the College of Engineering

> "I'd like to emphasize the simplicity of design that makes IPA extremely easy for new users to jump on board and use the application. It's goal is to take the complicated process of instructional planning from end to end and input has been sought from end users at every stage of development (of course, we're not done yet). The development team has been communicative with and responsive to the steering committee throughout the entire process – it's been a real pleasure to work with them!" -Tracy Lade, Chief Administrative Officer for the Department of Physics in the College of Letters & Science

> "The IPA team spent several hours meeting with staff and academic leaders in our unit to truly understand the needs of our complex unit. The system is extremely easy to use which makes training new users a snap. The IPA tool streamlines course planning as well as TA and instructor availability. This tool has the ability to serve as the single tool aiding academic units in complex curricular planning. It has already saved countless staff hours and has reduced the number of error made during manual course planning" - Jessica Potts, Chief Administrative Officer, Department of Chemistry in the College of Letters & Science

The project was first initiated in late 2013, with much of 2014 used to gather requirements from many different departments and stakeholders. Development began in earnest in late 2014 with the first modules released for beta testing in fall 2015, in time to be used for the annual scheduling process. Subsequent modules were delivered "just in time" to support the business processes through an agile development methodology with the first production release of IPA in fall 2016.

With the expectation that IPA will ultimately become the campus standard for instructional planning and given the Java foundations of the BANNER student information system, the development team chose to use Java and the Spring framework. This choice ensures that IPA can be supported as an enterprise-wide application—and opens the intriguing possibility of making IPA available commercially to other BANNER campuses both within and outside of the UC system.

Additional information about the UC Davis Instructional Planning & Administration tool can be found at the the project website:

https://ipa.ucdavis.edu/

Screenshots

Activity view, showing the detailed course schedule for a single quarter. The view includes planned and current enrollments, multiple course activities (e.g., lecture, discussion, and lab), assigned instructors, etc. Users can also add arbitrary tags to courses to enable advanced filtering, such as "core courses" or separate tracks within a major.
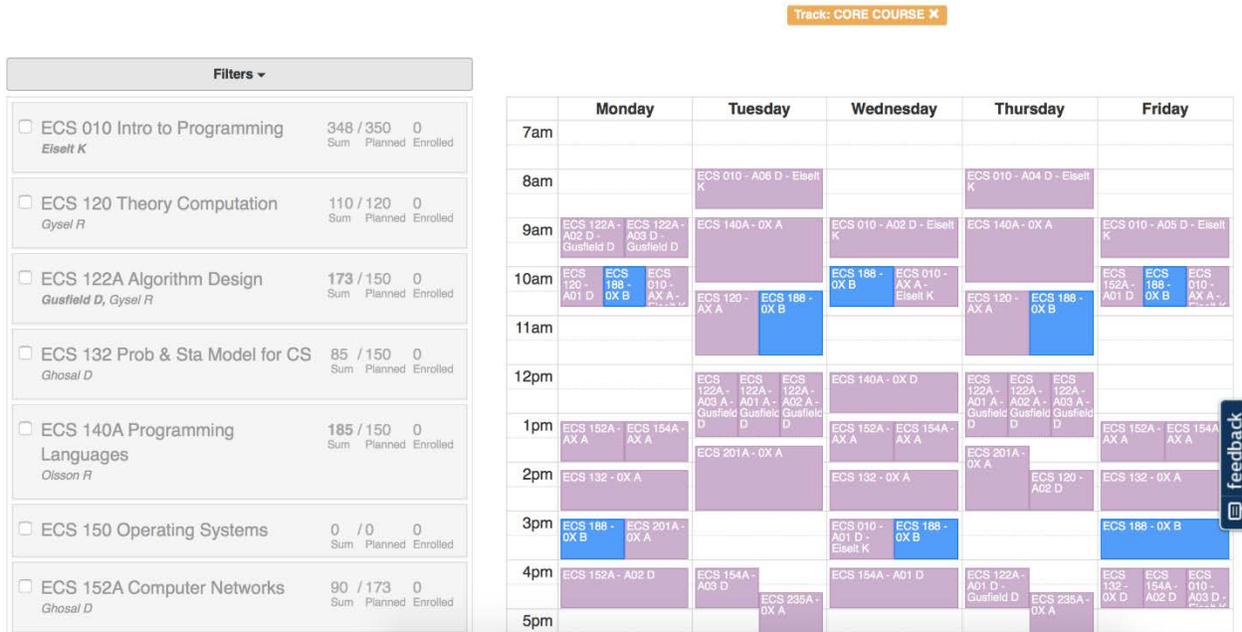
Section of Annual View, showing historical enrollment data to guide departmental decisions on how many seats to offer.
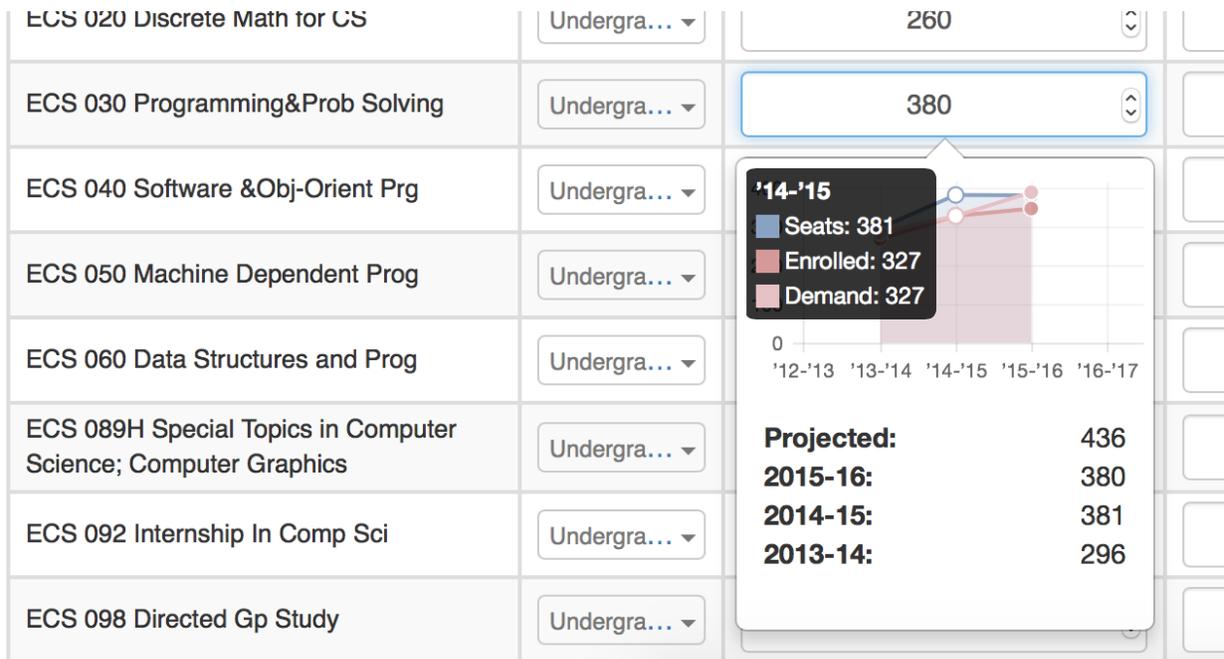
Instructor Teaching Call view, allowing an individual instructor to indicate which courses they would like to teach or to indicate sabbaticals, course buyouts, etc. Instructors can also indicate days and times that they are not available for each quarter.

Teaching Call 2016-2017: Computer Science

Summer Session 1	Summer Session 2	Fall Quarter	Winter Quarter	Spring Quarter
Add ▾	Add ▾	1. ≡ ECS 030 ▾	✖ 1. ≡ ECS 193A ▾	✖ 1. ≡ ECS 173 ▾
		2. ≡ ECS 015 ▾	✖ 2. ≡ ECS 163 ▾	✖ 2. ≡ ECS 165B ▾
		Add ▾	3. ≡ ECS 140B ▾ ✖	Add ▾
			4. ≡ Buyout ▾ ✖	
			Add ▾	

Unavailabilities
☐ Available ▣ Unavailable