

UC San Diego's Enrollment Authorization System (EASy)

EASy Does It: Adding and Dropping Courses the EASy Way

2018 Sautter Award Submission

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The Problem (the hard way)

There was a time when, in order to add, change or drop a class after the initial deadline, students had to pick up an add/change/drop card from the Registrar's Office, track down their instructor for signature, and then visit the department Student Services Office for a stamp (sometimes requiring an appointment). In some cases, even more approvals were required, meaning more trips across campus to get signatures. An undergraduate student wanting to exceed the quarterly unit limit would need to visit the staff at their college or Summer Session for approval. Graduate students dropping below the minimum unit limit had to go to Graduate Division. International students on F-1 or J-1 visas may need to have theirs signed by the International Students and Programs Office. After all that, the students still needed to bring the add/change/drop cards back to the Registrar's Office so the changes could be made in the campus mainframe. One day, these students may tell their grandchildren about this, the equivalent of walking 10 miles uphill in the snow, each way, to go to school.

Department staff had their own problems: how to manage the process of pre-authorizing hundreds of students, using a 30-year-old mainframe system, so that students could enroll in classes? Pre-authorizations had to be done one at a time in the mainframe green-screen system, which took an average of 5 minutes per student! Then staff had to actually notify the students that they had been pre-authorized via email or the Virtual Advising Center. Keeping track of students and their requests by e-mail and spreadsheets was something of a logistical nightmare. When you have 1,000 pre-authorizations per quarter, as some of the college writing programs do, the process becomes a huge drain on staff time and resources.

But what about students who just wanted to request pre-authorization to enroll in classes as an exception to prerequisites or restrictions? They would have to meet with or contact department staff, and often the class instructors, through e-mail or the campus Virtual Advising Center, to get the OK. If approved, staff would have to go through the pre-authorization process in the mainframe system, and then notify the student that they could enroll in the class. To make matters worse, there was no standardized way of making these requests, so students often had to do it differently for each department.

All of this running back and forth, using decades-old green-screen mainframe systems, and lack of standardized processes was a huge waste of student, staff, and faculty time and resources. There had to be a better way.

The Solution (the EASy way)

Fortunately, students, staff, and faculty now have the Enrollment Authorization System (EASy), easy.ucsd.edu. UC San Diego initially launched the online system in Spring 2016 to streamline the process of requesting and granting authorization to enroll in classes. The system facilitates the enrollment authorization workflow between students, instructors, undergraduate colleges and department advisors, Graduate Division, medical and professional schools, International Students & Programs Office, and Summer Session.

One of the most exciting aspects of EASy is the fact that, for the first time at UC San Diego, a non-campus mainframe system has been able to interact with real-time mainframe data. That means that EASy can process a department's approval of a request, and add the selected approval codes directly to a student's record, so that the student can be immediately notified that he or she can enroll in the requested class. In the past, such approvals would have required either manual entry into the mainframe system by the approver, or for EASy to upload a file to a campus system to be processed as a nightly batch. Not exactly an ideal solution, when a student is anxious to enroll in a class that's quickly filling up!

Having real-time access to a student's schedule and waitlist is also crucial to the proper functioning of EASy. Most campus systems have to rely on data from the campus data warehouse, which is refreshed nightly. But what happens when a student drops a class and wants to add another? In the past, it may have appeared to the system that the student was enrolled in more units than he or she really was, so submitting a request to enroll in another class might look like the student would exceed the unit limit. Without real-time data, a request could be routed unnecessarily to the student's college or to the

Registrar's Office for approval. Access to real-time data ensures that EASy properly routes requests based on the student's current situation, and that approvers aren't looking at stale data.

To help approvers to make decisions, EASy displays data from various campus sources for each request, including the student's major, academic level and standing; admission data; overall UCSD GPA; academic history and grades from transfer courses, University Extension courses, and UCSD courses; any pre-requisites or restrictions for the requested course (and whether or not the student meets those requirements); courses already pre-authorized for the student; and real-time waitlisted courses for the student.

How EASy Has Impacted Students, Faculty and Staff

Submitting enrollment authorization requests and approving them has never been easier for UCSD students, faculty and staff. The online process not only allows the student to quickly submit a request, but EASy integrates relevant data from various campus sources to help with approval decision-making. One of the goals of EASy has always been to provide information that approvers may need, so that they don't need to look it up elsewhere. It also stores the complete history for a request, and handles all approval routing and notifications.

The old process could sometimes take days to complete. It is estimated that the entire process took at least 30 minutes of student, instructor, and staff time, between getting the appropriate signatures, standing in line, and staff time to make updates in the mainframe system. Now requests are submitted online by the student, and approval can be done within minutes!

Since its launch, over 40,000 requests have been processed through the system. EASy is used by 47 academic departments and programs from general campus, Scripps Institution of Oceanography, and Health Sciences. In Winter 2018, the Registrar officially replaced the old paper add/change/drop card process with EASy. To date, nearly 15,000 individual students have submitted requests through EASy, and over 800 staff and instructors have used the system to process requests. That's a lot of time saved for students, faculty, and staff, who can now process one of these requests in just minutes.

EASy hasn't just improved the experience of requesting and approving requests for exceptions to course prerequisites and restrictions, and late adds, changes and drops. Department staff take advantage of EASy's efficiency to pre-authorize hundreds of students at a time. Consider how staff had to open the old green-screen terminal and manually add codes for each student they wanted to pre-authorize, to allow those students to enroll. Then they had to notify those students that they could enroll. Sounds bad enough, but when you consider that the current record for batch pre-authorizations through EASy was for an astounding 2,857 students for a single course, that's a lot of time saved! As of this writing, over 86,000 batch pre-authorizations have been submitted through EASy. What used to take hours to do can now be done in a matter of seconds.

Requests are routed through an approval process specific to the request and the student's situation, and some features are customizable per department policies. Users can track request statuses, and are notified via email once a decision has been made on the request. As a student-facing system, EASy has a

mobile-friendly interface, to make it as convenient as possible for students to submit and check on their requests from their smartphones.

Getting Even EASy-er

The system was created with input from many Subject Matter Experts in academic departments and programs, and project planning is led by a group that represents a cross-section of all campus units that use the system. The advisory committee meets weekly to plan continuous improvements to the system, based on user and student input. An integrated feedback form allows users to submit suggestions for improvements directly into the project management system, and these are reviewed regularly by the advisory committee. Since its launch, a number of ideas regarding incorporation of current paper processes and workflow into EASy have come to light.

The Academic Senate has given the approval to integrate into EASy the process for students to petition for enrollment in Special Studies classes, in which students learn about subjects not taught in regular courses and engage in research with a faculty member. This process currently involves the completion of a paper form by students, faculty, and staff, and then the processing of the form by the Office of the Registrar. The form is then kept in a file by the Registrar. EASy is currently being updated to accommodate this process, and rollout is planned for Summer 2018.

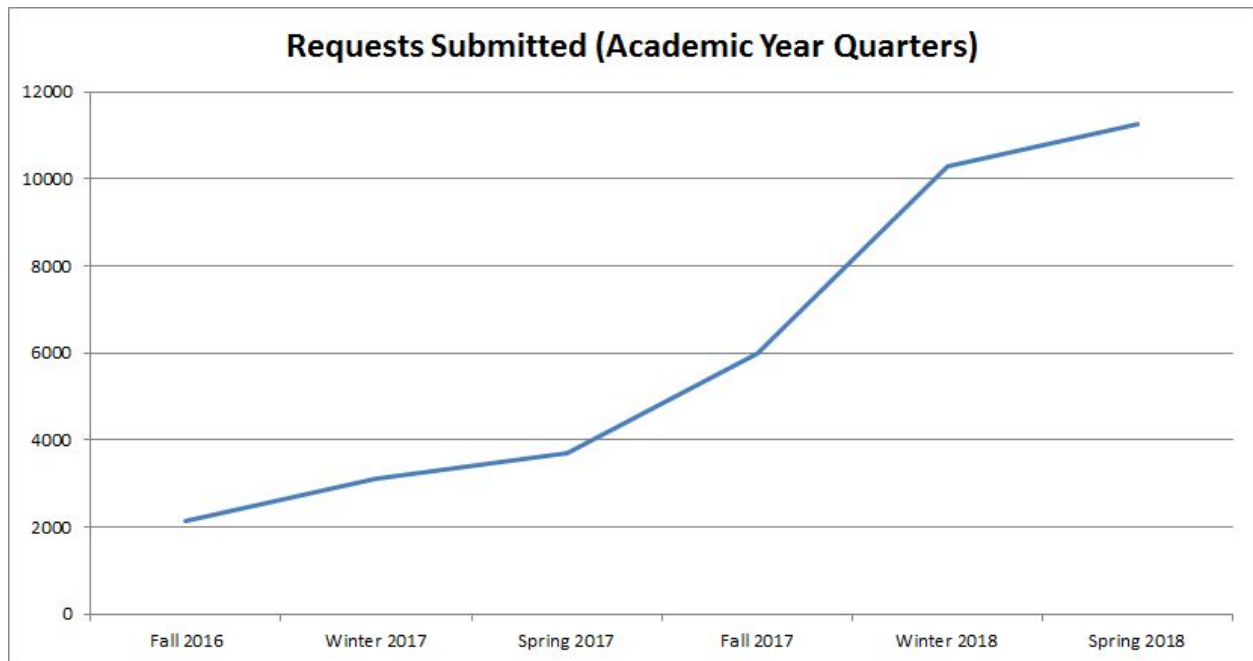
Interest has also been expressed by the Academic Internship Program (AIP), which offers undergraduate internships for academic credit, and the Regents Scholars Research Initiative (RSRI), which provides early opportunities for research experiences to talented undergraduates. Both of these programs have similar application processes, with unique approval processes that can be incorporated into EASy.

Project Goals

EASy was initially launched as the Pre-Authorization System, after the idea was initiated by Summer Session, with collaborative development by Administrative Technology Services (ATS) and Information Technology Services (ITS). The original idea was to create a system that would help visiting Summer Session students request authorization to enroll in classes, and be a tool for staff to manage 1,000+ requests from visitors every summer. After gaining buy-in and resources support from campus stakeholders, however, the scope was expanded to allow the system to be used by any student at any time of the year. The goal of the EASy advisory committee has always been to save students, staff, and faculty time; to streamline the existing processes through collaboration with stakeholders and developers; and to make a system that is easy to use.

Timeframe

EASy was launched in Spring 2016 to accept requests for Summer Session 2016. Although Summer Session mandated that the system be used for all Summer Session requests, EASy was built to accommodate requests for any quarter of the academic year. Academic departments and programs were given the option of using the system for pre-authorization requests starting Fall 2016, and that quarter, 42 departments and programs voluntarily used the system to process over 2,000 student requests. The number of requests processed through EASy has steadily increased, as is shown below.



Collaborative Development

Development began in Winter 2015, with the creation of the first mainframe-interfacing Application Programming Interfaces (API) by the campus' central IT group, Information Technology Services (ITS). This crucial piece was no small task to implement, since it had not been done at UC San Diego before. EASy is the first campus system to use APIs to not only access real-time information from the campus mainframe, but to also update it. This was a huge step for web application efforts, since systems have traditionally retrieved data from the campus data warehouse, which is refreshed nightly, and cannot be updated by web applications. Through the collaborative efforts of central campus developers at ITS, the APIs allowed EASy to become the robust system that it is today.

EASy was programmed in ASP.NET, and the data is stored in a SQL Server database. It uses the campus API Manager for interacting with the mainframe APIs, and users are authenticated by Single Sign-On and OAUTH.

The system relies on a robust roles system, which includes the entire campus organizational structure, to ensure proper routing and authorization. EASy also leverages permissions assigned to users in the campus mainframe, ensuring that their access and possible actions are consistent with what they can do in the campus mainframe systems.

EASy is a web-based system, so no special software is required to use it. As long as users have access to campus systems and a web browser, they can use it.