

QUARTERLY REPORT

SPRING 2006



COMPUTER LAB MANAGEMENT
CLASSROOM TECHNOLOGY SERVICES - INFORMATION AND EDUCATIONAL TECHNOLOGY
UNIVERSITY OF CALIFORNIA, DAVIS

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Goals and Accomplishments

Spring 2006 Overview

Computer Lab Management (CLM) operates 16 computer rooms. These computer rooms continue to be heavily impacted and utilized during Spring 2006. All rooms are effectively filled to capacity from 9:00 am until 5:00 pm. Such high utilization makes it difficult to provide timely access to our services.

During Spring Quarter CLM reached an agreement with the College of Biological Science that will allow us to open a new open access lab in 2060 SLB during Summer 2006. The new computer lab will have 37 seats and may help address some of the access issues our clients are facing in the immediate future.

CLM submitted a new printing rate for approval during Spring Quarter. The new rate of 60 free sheets with 30 grace sheets was approved and was implemented at the start of Summer Session I (6/26/06). The new rate should control the rising costs of printing. Since the printing costs will stabilize, CLM can begin to investigate developing and providing additional printing services such as wireless printing.

An ongoing concern is the staffing levels within CLM. The unit has two fewer career staff positions than two years ago while adding two new computer rooms and additional services. Therefore, we hope to add new positions in the coming year to bring workloads to a more reasonable level.

Goals and Accomplishments

Developed Agreement to Open and Manage 2060 SLB

Status: In progress

This quarter the College of Biological Sciences (CBS) approached IET about transferring management of the Bioinformatics Lab in 2060 SLB to CLM. CBS and IET finalized a Memorandum of Understanding (MOU) during Spring Quarter. CLM was able to change some of the funding assumptions by treating 2060 SLB as an open access lab without equipment replacement costs. This change allowed CLM funding operations of 2060 SLB for at least two years. Since the computers have a useful lifespan until Summer 2008, IET and CBS will finalize the long-term management and funding issues before that time.

CLM will finish outfitting the room and open it effective Summer Session II. This computer room has 36 stations, 30 of which were donated by Hewlett Packard. CLM will install two printers and add a security system to the room.

Add High Definition video editing support to the Meyer Media Lab

Status: Completed

With the move towards High Definition (HD) video in both the professional and consumer realm, the Meyer Media Lab wanted to be able to offer HD video editing tools to clients. CLM secured funding to upgrade six existing digital video editing stations to be HD capable. CLM upgraded each station to a dual monitor setup, with the second display being a high resolution Apple 23" Cinema Display capable of previewing HD video projects at native resolution. To improve the digital video editing workflow CLM acquired special keyboards with color-coded shortcut keys and jog shuttle. To handle the larger video files CLM installed 500 GB RAID drives. In addition to hardware, CLM purchased software two

Goals and Accomplishments

software packages: Shake 4, which provides professional video compositing and rotoscoping, and Media Clean Pro, which exports video in multiple formats.

Submit new printing rate for approval

Status: Completed

CLM submitted a revised print rate to campus. While recent quota adjustments have helped control growth, the associated costs with printing still exceed funding.

Effective Summer Session I 2006, all clients with a valid UC Davis Login ID will have 60 free sheets each quarter or summer session. Clients will be charged six cents per sheet starting at sheet 61. If a client prints 90 sheets or fewer, CLM will waive any accumulated charges.

Participate in annual Picnic Day

Status: Completed

On April 22, 2006 CLM took part in UC Davis' 92nd annual Picnic Day. The Hart Media Distribution lab was open to the public for events and exhibits. CLM student employees organized and staffed the event. They determined the class schedules and exhibits, created lesson plans, and taught classes. This year they taught the following classes: Picture Perfect (Photoshop CS), Movie Magic (iMovie), Amateur Animation (Flash), and Fantastic Flyers (Word). The classes were well attended. One new exhibit this year was Inside Computers that showcased the different internal computer components. Additionally, student employees coordinated with Dell and Apple representatives to display some of their latest computer hardware.

Plan for summer upgrades and renovations

Status: Completed

CLM finalized its summer upgrade plans for its facilities. In addition to supporting summer classes, CLM will undertake significant hardware and facilities upgrades.

As part of an established upgrade cycle, CLM will replace approximately 90 computers in three computer rooms: 73 and 93 Hutchison and 163 Shields. CLM will install 3.6 GHz Dell Optiplex computers with 2 GB RAM, a 160 GB hard drive, and a 17 inch LCD monitor. In addition to scheduled equipment replacement, CLM has also planned an extensive renovation and redesign of 163 Shields. This computer room not been renovated since it opened in 1990. Given the structural challenges and limited space, the renovation will focus on improving accessibility to the CRC, computers, and printers as well as improving the overall environment. CLM will install brand new furniture and chairs, including 10 standup stations and an ADA compliant station with an electric lift. CLM will also improve the lighting and electrical system.

Deploy print queue displays in select computer rooms

Status: In progress

CLM has piloted a print queue kiosk prototype for two quarters in 177 MU (The Station). This kiosk shows the most recently printed jobs to help clients locate their printed jobs and reduce congestion around the printers. Given the success of the pilot, CLM investigated and developed a more permanent and polished solution to deploy in other locations. The new display will consist of a 27 inch ViewSonic Widescreen LCD HDTV powered by an iMac mini 1.5 GHz Core solo. Additionally, CLM has redesigned the interface that shows recently printed jobs. These new displays will be deployed by the start of Fall 2006.

Goals and Accomplishments

Conduct a faculty survey

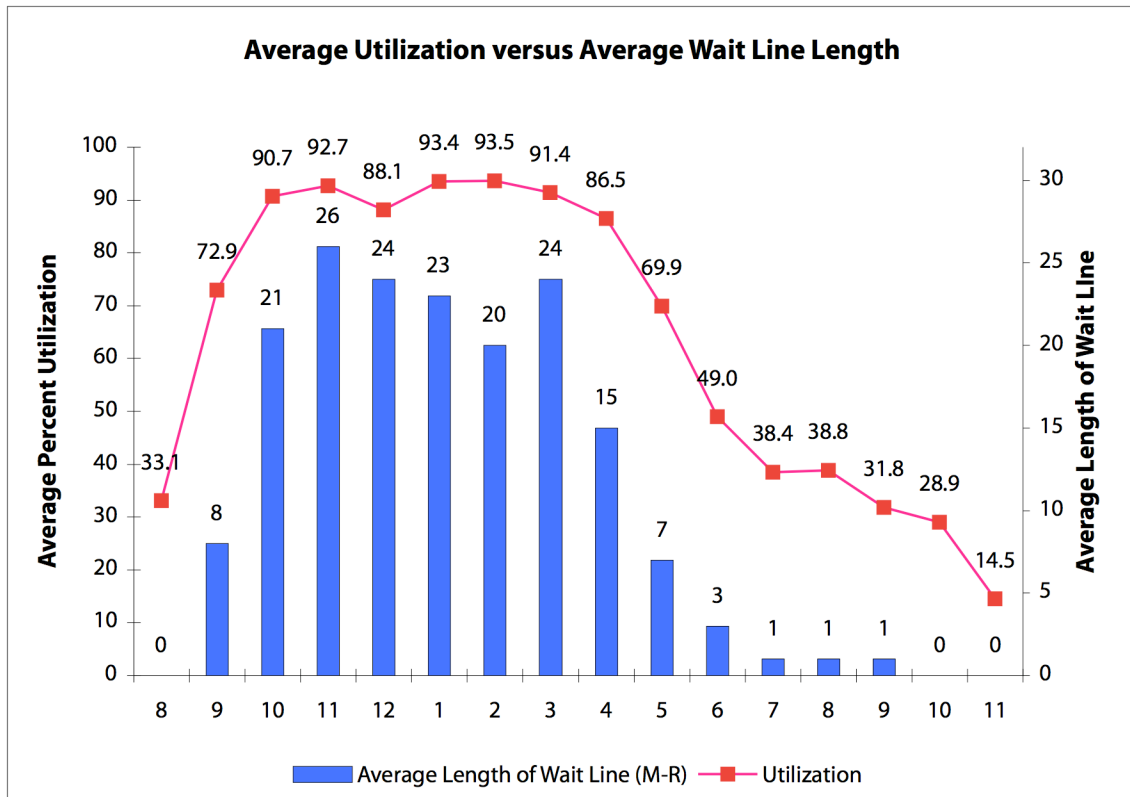
Status: Completed

As part of an annual process to identify our clients' needs, Computer Lab Management surveyed faculty who used computer classrooms during the Spring 2006 academic quarter. Though the survey results are not statistically valid, CLM evaluates the responses qualitatively to determine how we are meeting client needs and areas where we can improve our services. The survey results can be found at http://clm.ucdavis.edu/pubs/survey/faculty_s06.html.

Utilization

Overall computer room utilization

Computer Lab Management operates 16 computer rooms at UC Davis, consisting of computer classrooms, open access computer labs, and media rooms. All rooms experience high utilization during peak hours (9:00 am to 6:00 pm). The open access labs also experience long wait lines. The graph below combines utilization Monday through Thursday for CLM's 10 computer classrooms and 4 open access computer labs.



Utilization tabulates only actively logged in users and therefore does not record the time it takes between logoff and login. Because of this data collecting constraint, seldom does utilization reach 100 percent. It would only do so when an entire room is reserved for class or all the users remain logged in at their stations during the entire hour of tracking.

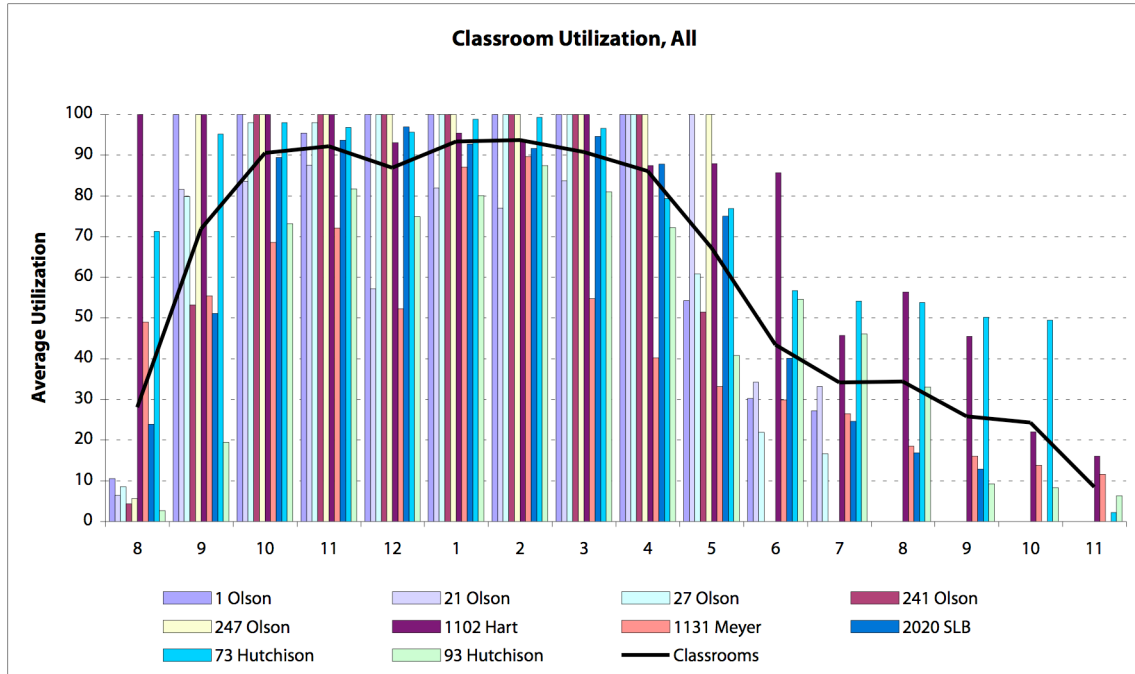
Student employees report wait line statistics on the hour and half-hour. Depending on external factors, such as class schedules or bus arrival times, lines may be considerably longer just a few minutes preceding or following the reporting time. Also, these statistics cannot capture the clients that would like to use a computer but choose not to wait in line. Thus, wait line statistics only roughly approximate demand. CLM believes actual demand for its services to be higher.

Utilization exhibits the behavior seen in past quarters, being highly impacted until 6 pm with considerable evening utilization as well. Wait lines were longer from 11 am to 2 pm than during Winter 2006 and Spring 2005. These longer lines were unexpected, especially since they had seemed to have stabilized over the last two years. CLM will monitor this to see if this was a temporary surge or indicates a rising trend.

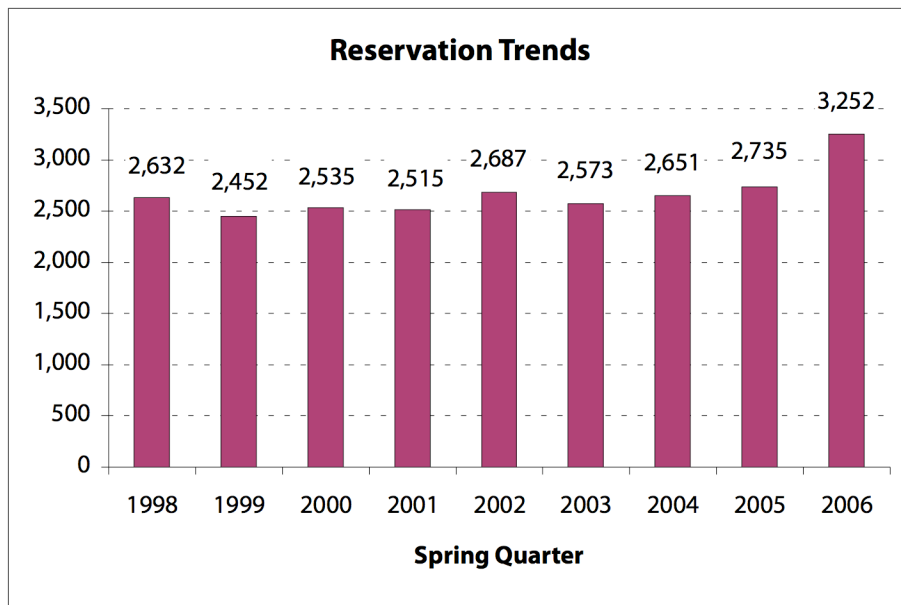
Core Report

Classroom utilization and reservations

CLM provides 10 computer classrooms for teaching and instruction. Instructors can reserve computer classrooms for classes or lab sections for the entire quarter or for one- or multi-day sessions. Between 9:00 am to 6:00 pm most computer classrooms are heavily reserved.

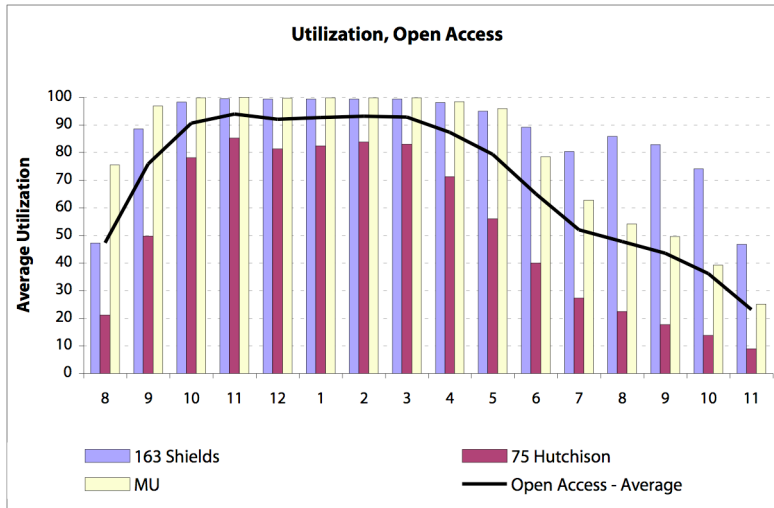


During Spring 2006, 106 classes were taught in CLM computer classrooms for a total of 3,252 reserved hours, an increase of 517 hours from the previous year. Part of this increase comes from opening a new PC classroom in Winter 2005 and converting a PC classroom into a Mac classroom Summer 2005.



Open access utilization

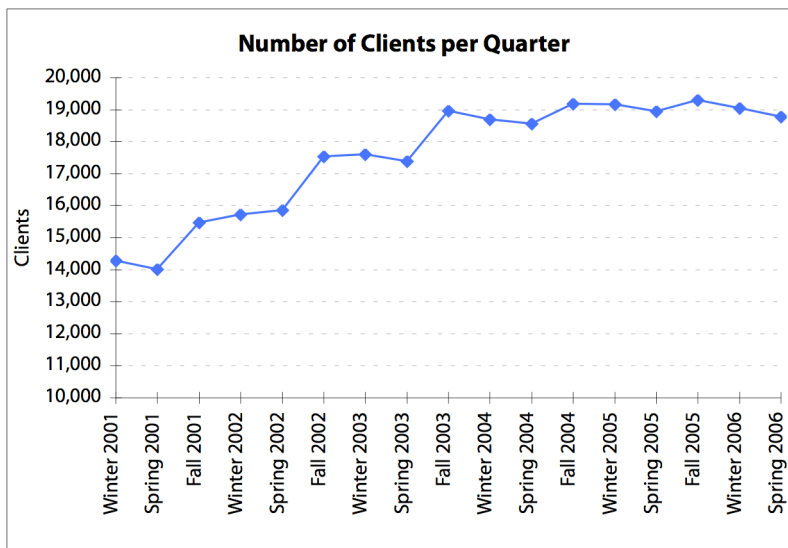
To address the need for on campus computer access, CLM provides three open access room that are never scheduled with classes. There are also two small stand-up areas collocated with Hart and Olson computer rooms. In total there are only 107 open access stations for the entire campus body. Open access rooms in core student areas such as the MU or Shields Library show high utilization; rooms in less central locations show lower utilization.



Logins and Unique Users

The number of unique users declined slightly to 18,769. This decline happens as students graduate over the course of the academic year. In spite of this decline, the number of times clients visited our computer rooms increased to 17.4 logins per quarter.

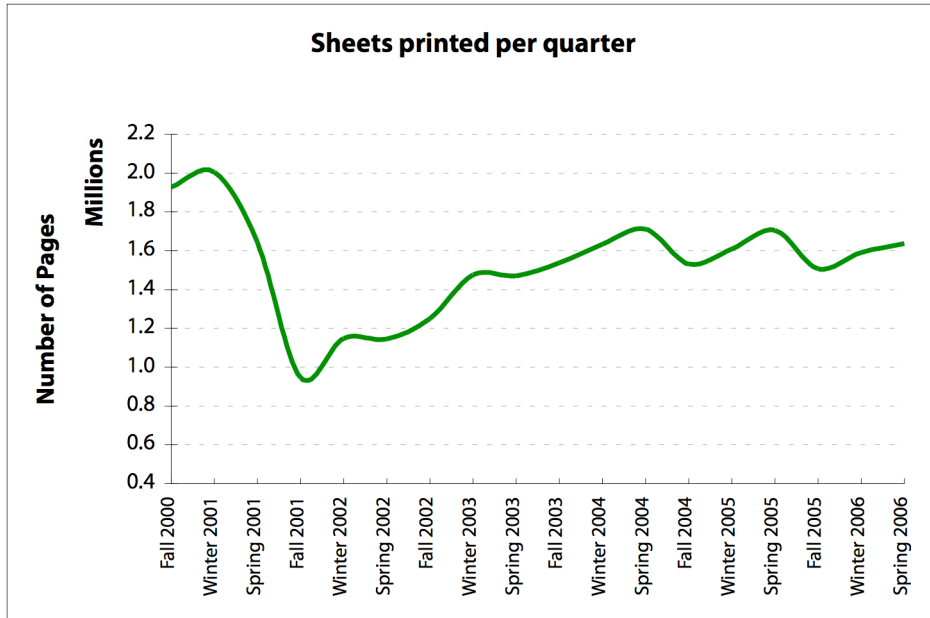
The number of unique users has stabilized over the last two years. This is due to campus-wide enrollment restrictions. However, CLM expects the number of unique users to increase substantially for Fall 2006 in light of record freshman admission projections. This expected increase in student population will likely result in increase in clients, such as in Fall 2003.



Printing

Total sheets printed

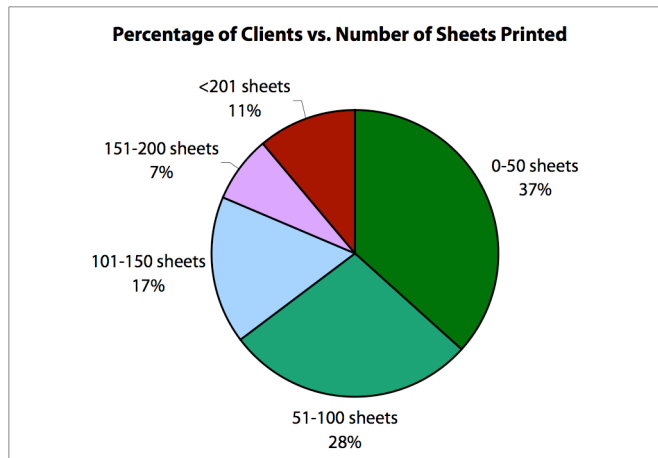
Another one of CLM's popular services is printing. All computer rooms have at least one printer, though some rooms may have two or three to cope with a high print volume. During Spring 2006 clients printed slightly over 1.6 million sheets. Proactive management of the printing rate and encouraging double-sided printing has helped control growth.



The decline in Spring 2001 reflects duplex (double-sided) printing by default in across all computer rooms. At that time CLM also established a 200 free sheet allowance and began to charge 5 cents per sheet in excess of that allowance.

Print allowance statistics

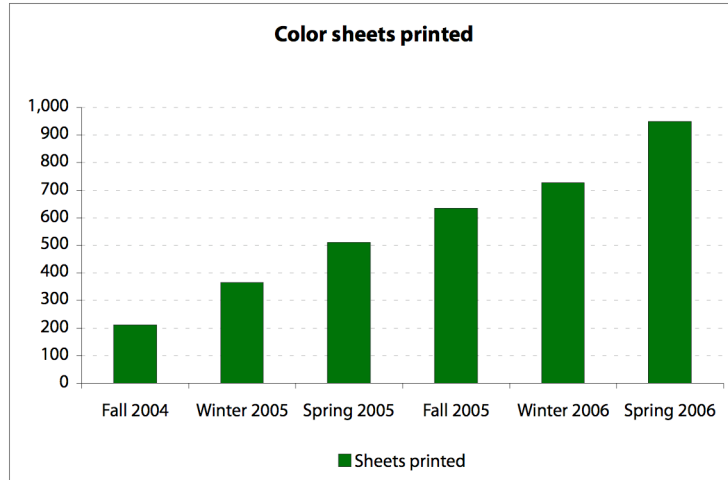
All clients with a valid UCD computing accounts receive a 100 sheet printing allowance. In excess of that allowance it charges five cents per sheet. CLM believes that this allowance gives clients adequate access to free printing while discouraging waste and controlling costs. Of clients who printed during Spring Quarter, 65 percent printed 100 sheets or fewer.



Core Report

Color printing

CLM offers a color printing service in 1154 Meyer. Unlike CLM's standard printing service, it bills for all color printing jobs to recuperate costs. It is still too early to make assertions about its performance. However, since its inception in Fall 2004, color printing has steadily increased every quarter.

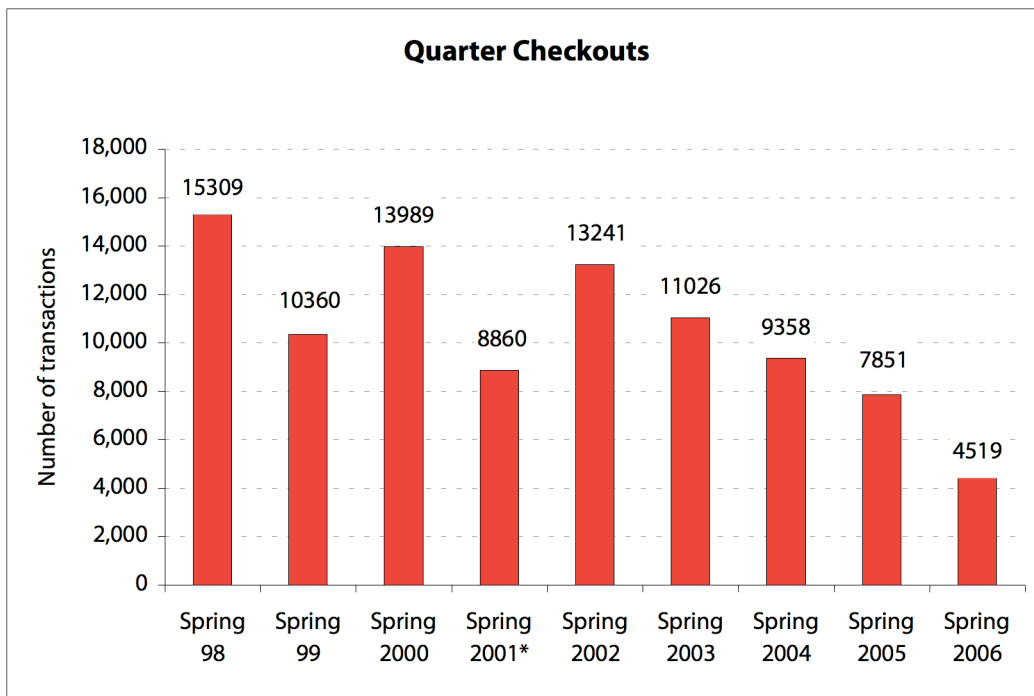


Hart Media Distribution Lab

The Media Distribution Lab (MDL) holds class materials such as DVDs, videotapes, audiotapes, slide sets, and notes for students and faculty to checkout and view in the facility. Faculty typically put these class materials on reserve at the MDL instead of the Library since the MDL has VCRs, DVD players, audio players, and slide carrels permitting clients to both check out and view the material in the same location. Additionally, there are also 18 iMac computers dedicated for viewing computer-based instructional software modules.

Checkouts

The graph below measures the MDL's checkouts for previous Spring Quarters. Consistent with the trend this academic year, overall checkouts have roughly halved. A significant contributing factor to this decrease has been the overall campus transition to providing materials digitally. For example, as part of IET's Digital Lecture initiative, CLM has helped courses that traditionally recorded lectures to cassette to now record and distribute these recordings digitally. With a major push for digital lecture recording scheduled for Fall 2006, CLM expects audio checkouts to continue to decrease.



Meyer Media Lab

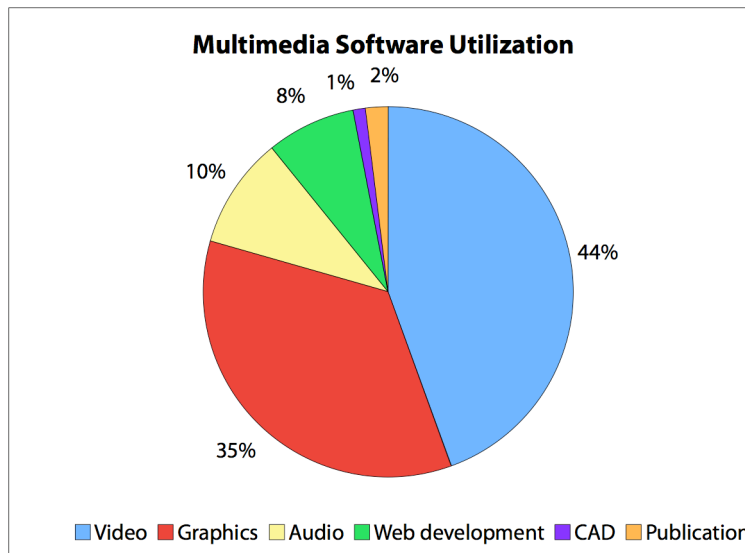
The Meyer Media Lab (1154 Meyer) is the main multimedia production computer lab at UC Davis. This self-service lab provides access to high-end multimedia production equipment and software for students, staff, and faculty to create their own multimedia projects. It has 17 PowerMac G5s and 5 PCs with flatbed and slide scanners, video capture equipment, and audio mixing tools. It also has dedicated to both group video editing and audio recording.

Utilization and session length

Since this media production lab purpose differs from other general-purpose labs, standard computer room metrics fail to capture the demand for services. Because Meyer is a self-service facility, demand fluctuates according to individual need and academic pressures, such as mid-quarter or final projects. For example, during the last few weeks of the quarter the Meyer Media Lab typically sees a significant increase in the number of clients doing video work.

Multimedia software utilization

Software utilization best illustrates demand for 1154 Meyer's media production services. The graph below shows the percentage of the total hours used for broad multimedia software categories. Video production accounts for 44 percent of usage and graphic software accounts 35 percent. Audio production accounts for 10 percent, especially high since there is only one station specially designated for audio work.



Some multimedia programs include:

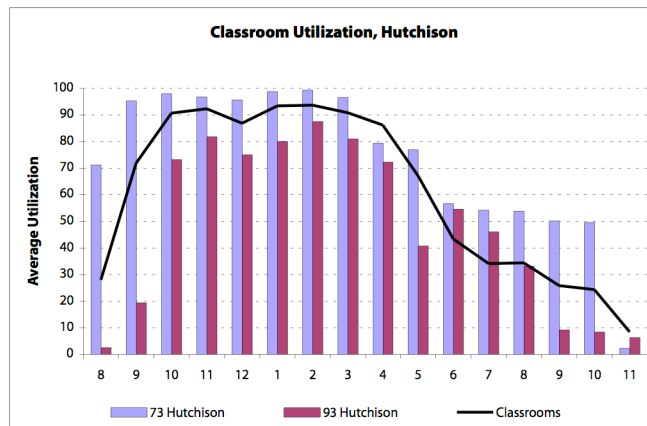
- *Video*: Final Cut Pro, iMovie, DVD Studio, Motion
- *Graphics*: Photoshop, Illustrator, ArtRage
- *Audio*: ProTools, SoundTrack
- *CAD*: VectorWorks, SketchUp
- *Publication*: InDesign, Microsoft Publisher

Detailed Classroom Utilization

This section examines the utilization for each computer classroom. The graphs below provide details on each the computer classroom utilization. The superimposed line represents the weighted average utilization for all the computer classrooms for comparison.

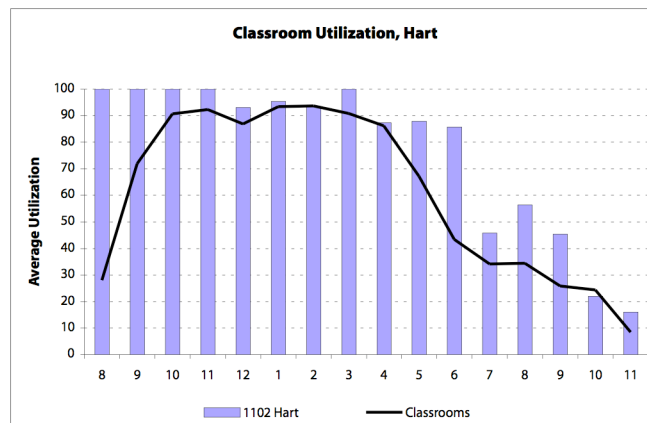
73 and 93 Hutchison

The College of Agricultural and Environmental Sciences heavily reserves 73 Hutchison for the college’s AMR 21 course. The quarterly course utilizes the room for lab discussions and to complete assigned projects. Often AMR students return to use it for academic work when not reserved. Also, teaching assistants regularly hold office hours in the facility thus providing additional support for students.



1102 Hart

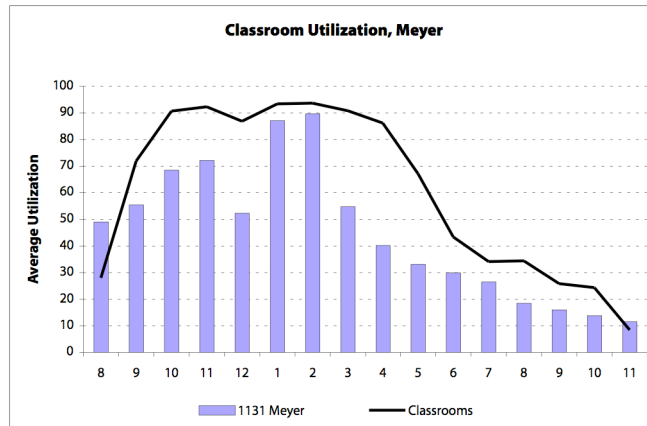
The graph above shows a high utilization level for the 1102 Hart computer classroom. The 1102 Hart facility is unique as a high-end multimedia classroom. It is reserved primarily for teaching students how to use multimedia hardware and software, offering high-end Apple Mac G5 computers with access to flatbed scanners, support for audio functions, and specialized software for multimedia design, layout, and illustration. Courses scheduled in the early morning hours contribute to the significant, above average utilization starting at 8:00 am. During evening hours, the facility well exceeds average classroom utilization.



Appendices

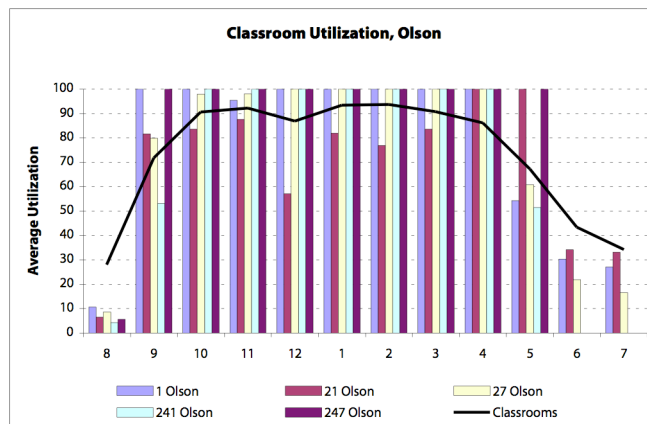
1131 Meyer

The 1131 Meyer facility continues to present an anomaly to the typical utilization trends. While other computer facilities show a flattened peak during the 9:00 am to 6:00 pm times, this facility shows peaks and valleys in usage throughout the day. There could be numerous explanations to this behavior. The strongest explanation is the distance of Meyer from the central campus and that few classes are scheduled in that area of campus. As a classroom, its distance from central campus may also discourage some instructors from using the facility. For open access, students prefer to wait in long lines for central core campus facilities instead of traveling to rooms located at the periphery of campus. In the evening, Meyer's proximity to available parking may make it more attractive for evening use.



1, 21, 27, 241, and 247 Olson

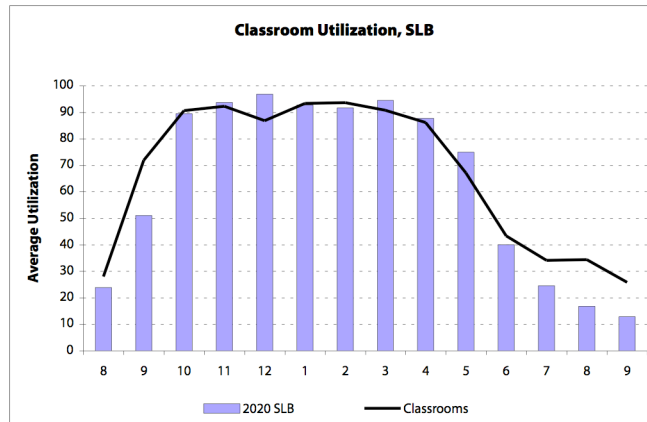
Olson Hall facilities are heavily scheduled for classes between 9:00 am and 6:00 pm. The graph above reflects the heavy utilization of the five Mac classrooms in Olson. The University Writing Program primarily reserves these Mac computer classrooms for their Computer Aided Instruction (CAI) writing courses. Effective Fall 2005, 27 Olson was converted from a PC to a Mac classroom, which increased the number of classes held in this computer classroom.



Appendices

2020 SLB

During Winter 2005, CLM opened a new computer classroom in 2020 Science Lab Building (SLB). At 41 seats, 2020 SLB is the largest computer classroom managed by CLM. As part of an agreement with the College of Biological Sciences (CBS), the room will provide up to 40 percent of its hours for CBS classroom use. When not in use by CBS or other scheduled classes, the room is available for open access. After starting off with below average utilization, it now sees utilization comparable to other CLM computer rooms.

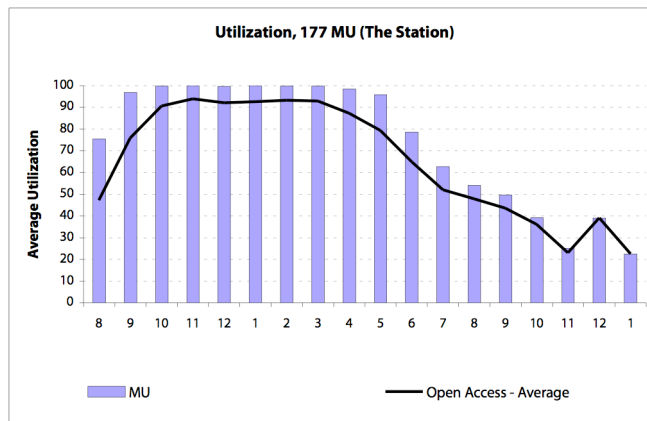


Detailed Open Access Utilization

The graphs below represent details the utilization of each of the open access labs. The average line represents the weighted average utilization for all open access labs.

177 MU

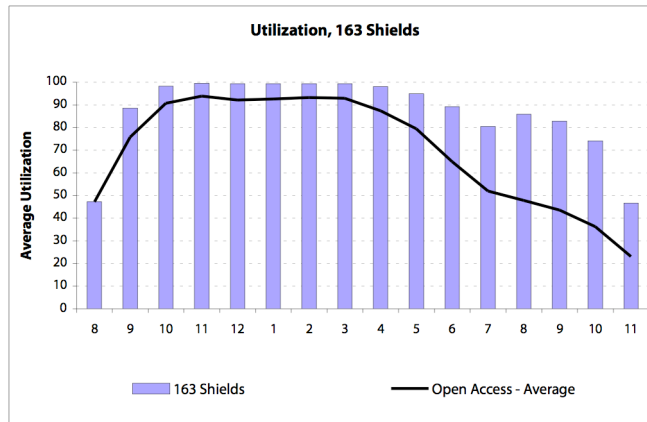
177 MU (The Station) is by far the most popular lab with students. Being located in the core of the campus adjacent to other student services contributes to the lab's high utilization. The lab exceeds the average computer lab utilization during all of its operational hours. The lab quickly fills to capacity shortly after opening at 8:00 am and still is highly utilized at 10:00 pm. Because of its popularity, it has lines throughout the day and well into the evening. The two weeks leading up to finals the Station stays open until 2:00 am. This accounts for the peak 12:00 am on the graph below.



Appendices

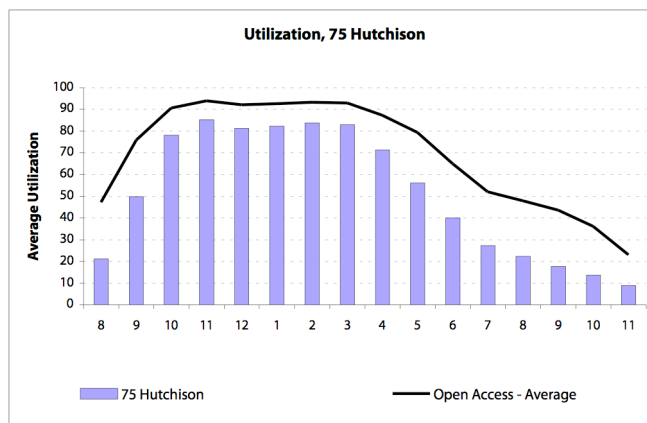
163 Shields

One of the busiest facilities is the 163 Shields open access room. Its prime location within Shields Library often results in a high drop-in demand with long lines waiting to use one of its 19 computers. Waiting lines should always be expected at the 163 Shields computer room, even in the late evenings. Like the Station, 163 Shield shows above average performance from its opening to closing. It exceeds all other computer rooms in utilization over its open hours. Starting Fall 2005, CLM extended this room's hours to better match the Library's open hours.



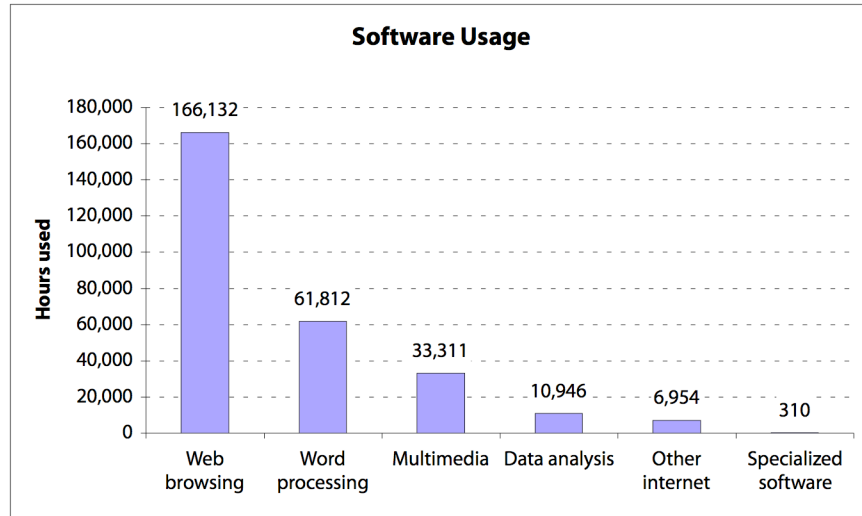
75 Hutchison

75 Hutchison offers 26 Windows based stations and 11 Mac OS based stations. Its utilization is still slightly below the average open access lab utilization. This lower than average utilization is most likely explained by its co-location with the 73 and 93 Hutchison computer classrooms. When these two computer classrooms are not scheduled for classes, they can be used for drop-in use. As a result, users tend to distribute themselves between the available rooms. In addition, the basement location of the facility makes it less accessible to walk-by traffic.



Software

This section examines the software that clients use in the computer labs. Internet access continues to be the primary application in CLM computer rooms, with word processing following a distant second. The graph below shows the most commonly used applications.



Word processors are exclusively Microsoft Word.

Web browsers

- Internet Explorer
- Safari
- Firefox
- Mozilla

Multimedia applications

- Adobe Photoshop
- InDesign
- Illustrator
- Final Cut Pro Studio
- Vectorworks
- Flash
- FrontPage
- Dreamweaver
- Microsoft PowerPoint

Data Analysis tools

- Microsoft Excel
- SAS for Windows
- Microsoft Access

Other Internet

- SSH/TELNET
- FTP

User Demographics

User affiliation

97 percent of the users of CLM’s computer rooms are students. This number represents 61 percent of all undergraduate and graduate students (including professional schools) at UC Davis. CLM served approximately 72.8 percent of the undergraduate population and 18.4 percent of the graduate and professional student population. In addition to students, faculty comprise 1 percent and staff 2 percent of total logins.

Student users’ college or school

The graph below illustrates the users by their college or school. While the largest group of students comes from the College of Letters and Science, the largest percentage of any college belongs to the College of Agriculture and Environmental Sciences. Professional schools, having a greater level of internal computer support for their students, had the smallest proportion of their population utilizing the various central computing facilities. The level of support as well as laptop ownership and school support may indicate why few students from professional schools utilize our facilities. Another factor might be geographic location of professional schools in relation to that of our computing facilities.

