EECS Instructional Computing - Review and Plans
Fall 2013

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Lab Renovations

After several years of deferred maintenance because of budget cuts, nearly every Instructional lab has been upgraded or renovated in recent months:

1) 271,273,275,277 Soda: renovations and new Intel computers

   The CS Division has started a 3-year project to renovate the labs on the second floor of Soda with new chairs, tables, carpet, projectors and paint. New carpet has been installed in the hallway and 2 labs. New chairs were installed in June 2013.

   Thanks to Prof Culler's efforts, Intel has generously donated 150 new NUC computers and LCD displays for these labs. The NUCs run Linux and will be available for Fall 2013 classes. Details: http://inst.eecs.berkeley.edu/~inst/2xxSoda. (August 2013)

2) 140 Cory: 6000 SF lab modernization and showcase

   Texas Instruments and Agilent funded a major structural and equipment renovation to the EE40/42/100/140 lab in 140 Cory (Microelectronic Circuits, Linear Integrated Circuits). There are yellow wired AirBears cables at each station. Details: http://www.eecs.berkeley.edu/Cory/TI/. (April 2013)

3) 105 Cory: replaced 10-year-old PCs for signals and systems computations

   We replaced 30 10-year-old PCs in 105 Cory with new ZT systems (i7 cpu, 16-GB RAM, 2-TB disk, Win7). This benefits EE20N (Systems and Signals) and other courses that use Matlab and LabView in 105 Cory. (May 2013)

4) 125 Cory: merged with lab equipment from 353 Cory

The 353 Cory lab (EE105, EE140, EE141, EE145L) was converted to non-instructional use, and the 24 lab stations and computers were moved to 125 Cory, which was recently renamed the "TI Mixed Signals" Lab. (May 2013)

These include the 12 new ZT PC systems (i7 cpu, 16-GB RAM, 2-TB disk, Win7) that were donated by Intel (June 2012) for the benefit of EE105 (Devices and Circuits) and EE141 (Digital Integrated Circuits) running Ltspice, Hspice. The other 12 systems are 10-year old PCs that we can't replace yet because of old software that won't run on the newer computers.

5) 204 Cory: new PXI systems from NI

Thanks to a generous grant of equipment and technical support from National Instruments, we have installed or upgraded 12 new PXI 1042Q systems. These include powerful workstations with integrated test and measurement modules.

6) 119 Cory: new M92p "Tinys" from Lenovo

We replaced 9 old PCs with new Lenovo M92p "Tinys" (i5 cpus, 16-GB RAM) with Linux, so EE125 can run ROS robot controller software.

7) Compute Servers: 24 servers donated by Yahoo!

Thanks to a generous grant from Yahoo!, we have received 24 servers that will be login servers for Windows and Linux applications. (April 2013)

We previously added 9 new servers running Linux for general use. (Nov 2012)

8) Icluster: Increased capacity for Big Data

Thanks to Prof Canny and Intel, we increased the hardware on our 26-node cluster to 16-GB or 32-GB RAM and 2-TB disks. This benefited CS294-1 (Behavioral Data Mining) running MarkLogic, CS250 (VLSI Systems Design) running Synopsys, and several classes running MapReduce. (Feb 2012)

9) 349 Soda: 8 new PCs for Windows applications

We added 8 more ZT systems (i7 cpu, 16-GB RAM, 2-TB disk, Win7) with all of the software that is normally installed in EE labs in Cory. We may move these systems to 125 Cory eventually, to complete the replacement of old PCs there. (June 2013)

10) 283F Soda: video authoring studio

We installed a new ZT PC system (i7 cpu, 16-GB RAM, 2-TB disk, Win7) with camera, microphone and Camtasia for GSIs and other students to record video presentations for tutorials and course presentations. (June 2013)

11) new chairs

We replaced 35 old chairs in 200 Sutardja Dai Hall (June 2013)
We replaced 140 old chairs in 271/273/275/277 Soda Hall. (June 2013)
We replaced 60 old chairs in 105 and 199 Cory. (Spring 2013)

12) 199 Cory: new SanDisk Computing Lab

Thanks to Prof King-Lau's efforts, SanDisk has generously offered to renovate 199 Cory and much of the 1st floor Cory hallway. 199 Cory will continue to be an open instructional computer lab, but with additional resources (seating, shared screens) for group collaboration. The work will begin in January 2014.

13) 125 Cory: new M92p "Tinys" from Lenovo

We will replace the PCs used by CS150 with new Lenovo M92p "Tinys" (i5 cpus, 16-GB RAM) running Linux, for CS150 running Xilinx.

Plans and Priorities

Funding wish list:

1) Upgrade Metrics for EE143 to Win7 version ($76000);
   or replace 9 HP 4145 analyzers that can't use Agilent ($???)
2) Replace Netshow01 and Helix video streaming services ($14000)
3) Renovate 105 Cory: new furniture, wiring, A/V ($30000)
4) Install HD projectors in 200 SDH ($5000)

We need a replacement plan for these compute servers:

1) the Icluster (26 nodes, MapReduce and Synopsys are run there)
2) our SPARC servers, which are primarily used for Cadence, Synopsys and other CAD tools

We'll evaluate outsourcing those platforms to sites such as the IST Virtual Servers, EECS OpenStack or Amazon AWS. The cost associated with some of these services has been an impediment so far.

We need to allocate staff time to develop new services, such as:

1) create authentication services so laptop users can access our printers and software licenses
2) install work areas and software for group collaboration
3) improve our WebAcct user portal for account management (change passwords, access the 'grading' software, request cardkey access, etc)
4) improve our tools for instructors to deploy course WEB sites and video streaming
5) improve our technical support for classes using CAD tools such as Cadence, Synopsys and ADS.

We reduced the Instructional IT staff by 1/3 (from 6 to 4) during the budget decreases in 2009-2010, and the enrollments have increased by 1/3 since then. So these projects have been deferred while the staff concentrate on more immediate tasks to maintain the computers and labs. Fortunately, these tasks have included a large number of lab renovation and expansion projects that occurred in the last year.

Mission Statement

The EECS Instructional Support Group (ISG) installs and maintains networked computers that are used by EECS classes. ISG provides computer accounts for instructors and students in the Instructional labs and on Instructional servers. ISG purchases, installs and maintains application software needed for classes. ISG supports instructional labs in Cory Hall, Soda Hall and Sutardja-Dai Hall.

ISG wishes to anticipate and meet the computing needs of instructors and students in EECS courses and to provide support for new and innovative learning environments. We wish to be accessible and responsive to requests for service. We also wish to learn about new and interesting technologies that may be of value in this service.

Organizational Scope

These are functions in which ISG interacts with other UCB support groups:

- we use EECS department services (IDSG) for Active Directory, disk space, network access and security scans
- we synchronize our user accounts with the EECS department (IDSG)
- we obtain enrollments from the Registrar (Student Information Services)
- we obtain cardkey numbers from the CA11 office
- we submit cardkey authorization to our labs in batch uploads to UCPD
- we bill students' voluntary printer charges to CARS
- we manage the computers in engineering labs with ESG
- we manage the licenses for Synopsys/TCAD/HSPICE with the Device Group
- we manage the licenses for Cadence with the BSAC group
- we manage the licenses for Maya and Renderman with the BCAM group

Notable Events

See http://inst.eecs.berkeley.edu/notices.html for current events.

For additional reports, please see https://inst.eecs.berkeley.edu/reports
For additional information, please contact me:

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