

Software and Hardware Change Management Policy for CDes Computer Labs

Overview

The computer labs in the College of Design are closely integrated with the academic needs of faculty and students. Computer lab resources are shared between all of the college's academic departments to maximize their value and utilization. This model has been successful but depends heavily on careful change management.

The computer labs are like a small bio-system where small changes in hardware or software can have a rippling effect throughout. Therefore, change is handled through careful planning making it possible for academic departments to develop curriculum and training with assurance that the computer labs will be ready to support them. This policy describes the way changes in the computer labs are managed for the benefit of faculty and students.

Software Changes

One of the major functions of the computer labs is to make advanced software applications available to students. In Rapson Hall, a recent inventory included thirteen major titles not including subtitles for collections such as Adobe's Creative Suite. These applications are often very complicated and require detailed configuration to run properly. They represent a substantial investment by the college not only in financial terms but also effort: faculty training to be able to teach the use of the applications and lab technical staff to be able to install and maintain them.

For the purposes of the CDes labs, there are two different classifications of software: *core* and *supplemental*. The core applications include the operating system and other system software (anti-virus, print drivers, etc.) and standard tools such as Microsoft Office and Adobe's Creative Suite. The core applications rarely change and become the base installation for every lab computer. Supplemental software consists of everything that is not in the base set. These applications are regularly reviewed for need/relevance and frequently change depending on curriculum needs, etc. The list of core and supplemental applications is found on the college IT department's [web site](#) and is updated as needed.

All core applications are installed on every computer in CDes labs. Supplemental applications are installed on every computer in Rapson or McNeal Hall (although not necessarily on every computer in both buildings). This policy insures that lab clients will have access to core and supplemental software at all times rather than only in a specific room where a class is taught. With the college's academic departments split between two campuses and buildings, it does not make sense to require supplemental applications be available universally if they are specific to one academic department. This policy will have to be reconsidered once the college is physically located on one campus.

Types of Changes

There are three different kinds of change associated with software:

- Upgrades

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- Additions
- Removals

Each of these poses unique challenges for lab technical and support staff and clients.

Upgrades fall into two different categories: patches and version changes. A *patch* is an update to a software title that does not change the version (or results in only a minor version change). Usually a patch contains a fix for functional or performance problem or security vulnerability. Patches are released for operating systems (a special kind of application software) as well as for applications. A version change completely replaces an application with a new release of the software. Version updates may include functional as well as user interface changes and may require re-training or substantial “hands-on” time to regain proficiency. In most cases, patches are installed as soon as possible. Version changes are only made between academic years and only with the approval of the stakeholder(s).

Software additions are new titles added to the existing installed core or supplemental group. They are typically introduced as supplemental but can become a part of the core group. Additions require funding support from the college, an academic department, the IT department or some combination. The stakeholder requesting the addition is responsible for securing funding which must include:

- Enough licensed seats to cover at least the number of computers in the largest teaching lab in a building. The software licensing type must be a “network” or “floating” license if it does not include enough seats for all of the computers in the labs in a given building. Enough additional licenses must be included to cover the office computers of faculty who will be teaching the software as well.
- A support agreement with the software vendor that includes upgrades (both patches and new versions) on an on-going basis. If funding for the support agreement is not available the software will be removed from the labs.
- Ideally, lab software applications should be available for purchase by students for installation on their personal computers. These arrangements should be handled through the university bookstore.

Removal changes are made when a software application is no longer needed to support an academic curriculum or when funding is no longer available to insure updates are available. The schedule for making these decisions is covered below.

Change Cycle

Regardless of the type of change (upgrade, addition, removal), each requires advance notice and planning to implement. In particular, each change needs to be tested before it can be implemented. Testing may fail meaning more work will be required. In some cases, issue(s) arising from testing may not be technically solvable so a decision will have to be made on whether to continue with the change. The IT technical staff will work with stakeholders to resolve these issues as they arise.

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New applications require special treatment and may require additional lead time. In order to actually do testing and, ultimately, implement the change itself, technical staff will need software installation media and license codes. The ordering process in many cases may take up to two weeks to complete (purchase request, order processed, media and keys shipped). In some cases software licensing agreements need to be reviewed by the university's legal counsel before they can be signed.

With the above in mind, the following cycle has been developed to facilitate software change in the computer labs:

- Changes for the following semester may be requested at any time from the beginning of the current semester up until 4 weeks before the end of classes. This time is needed to make sure that the software being requested will run reliably in our lab environment and, if not, to work with the department and/or faculty to develop an alternative plan. Contacting the IT staff earlier obviously is advantageous for everyone.
- A change involving a new software application must be accompanied by appropriate funding source(s) as described above.
- Change requests will be collected during the semester and, no later than the fourth week before the end of the semester; the IT staff will review the requests for compatibility with our existing environment and work with the accounting office and software vendor to place orders.
- Once the installation media and keys are received, the testing process will begin and last up to two weeks. If there are any issues identified during the testing process beyond those that can be solved technically, the stakeholder will be consulted and a mutually agreeable decision made.
- Assuming the ordering and testing processes are completed successfully; requested changes will be implemented based on the following:
 - Application version changes will be made once per year prior to the start of the new academic year (fall semester). E-mail lists for interested parties will be notified about any major version changes and given an opportunity to comment. Contact the CDes Lab Manager to get on a list.
 - Software additions and removals are made twice a year during semester and summer breaks (changes for summer session(s) should be requested in the fall as a part of the spring semester changes).
 - Critical upgrades (patches) to core or supplemental software will be installed as soon as possible rather than waiting for the semester cycle.
- During the spring semester change request cycle, stakeholders will be asked to review the list of supplemental software and confirm that it is still necessary and that funding to continue its support will be available for the next academic year. The college's academic technology advisory

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committee will review the list of core applications and make recommendations on any changes during the same period.

Hardware

Another major function of the college labs is to provide access to high quality input and output devices including scanners, printers, plotters, and projectors. These pieces of equipment interact with core software applications (operating systems, drivers) making changes even more complicated than software. Beyond the peripheral devices are the actual computers themselves which are also included in the hardware change policy. Because the change cycle is slower (annual) and because there is much less variety than software, the change policy is much simpler. In some cases, hardware may have software associated with it (drivers, firmware, etc.). These changes will be handled according the software change policy.

The college intends to replace lab hardware on a three year cycle. New equipment will be installed during the summer break (unless it is to replace a failed component). Stakeholders will be consulted via the college's academic technology advisory committee on whether a given piece of equipment should be replaced (or removed) and, if so, what specifications should be used in identifying a replacement. If it all possible, new equipment will be tested for compatibility with other existing hardware and core and supplemental software. Since equipment in the labs is shared, it will be budgeted for by the college (IT department).

Requests for hardware additions to the computer labs may be made by academic department heads at any time during the academic year up until the college's fiscal year budget is finalized in the spring semester. The IT director will include lab hardware addition funding requests in the department's annual budget proposal. These requests will be prioritized in consultation with the academic department heads.

Implementation

Software and hardware changes made under this policy will require computer labs to be closed for five working days two weeks before the start of each semester.

Exceptions

This policy for the CDes computer labs is designed to accommodate the needs of academic departments, faculty, and students based on the normal cycle of the academic year. In some cases, circumstances may require changes outside of this cycle. This policy provides for that eventuality by incorporating an exception change cycle which can happen at any time during the academic year.

An exception may be requested at any time by an academic department head. The process and requirements earlier in this policy will still apply. The difference will be that the implementation will

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start immediately upon the receipt of the request. In addition, the requesting department must also provide funding for staff time required to implement the software or hardware change.

In the case of software change requests, staff time is estimated to be one overtime hour per computer affected. The minimum number of computers will be one entire lab room and, in most cases, all of the lab computers in the building where the request is being made should have the software installed as students have requested.

For hardware, since the time involved can vary greatly depending on the type of equipment, whether drivers or other software is required, and the scope of use, IT staff will provide the department with an estimate within five working days of when the request is made.

If the exception results in the installation of software or hardware that will be used beyond the current semester, IT staff will incorporate it into the normal change cycle starting with the next semester and there will not be any staff time charges associated with that. The funding for maintenance/support will still need to be addressed as part of the college's fiscal planning process.