

23. Gradual Conversion of General-Purpose Classrooms to Smart Classrooms and Additional PC/Laptop Classrooms as Needed.

Goals A21 and A22

- A21. Development of a year-by-year plan for PC classroom expansion or contraction based upon program needs and projected future use of laptop computers in lieu of PCs.
- A22. Developing a plan for the retrofit of current standard classrooms to smart classrooms.

Problem Statement

Rapid changes in technology, as well as ongoing shifts in instructional approaches employed by the faculty of the College, make it impossible to fully project how the College's classrooms would need to be configured over the next decade. Since 1994, a high priority has been given to converting traditional classrooms to PC-based classrooms to facilitate faculty and student access to computer technology across all the College's curricula. The new Center for Business and Industry, which will open in the Spring 2003 term, continues the College's expansion of its PC computer classrooms. However, the design of the new building provides for greater flexibility in the use of PCs and includes the option in many of the classrooms of teaching in a laptop as opposed to a PC environment. There are several advantages associated with a laptop classroom: (1) the physical renovations required to convert a general-purpose classroom to a laptop environment are less; (2) less square feet is required per student; and (3) there is greater flexibility to use the classroom for other purposes. There are several disadvantages to a laptop classroom. In some areas such as Computer Information Systems and Graphic Design and Architecture, a laptop computer is inappropriate to use for instruction. There are significantly more potential security issues associated with laptop classrooms than there are with PC classrooms. Additionally, instructional time may be lost with the distribution and collection of laptops.

Another development, whose implications are not fully understood by the College, is the advent of wireless technology. Wireless technology will create additional flexibility in terms of how classrooms are used and reduce some of the classroom infrastructure investment that is required to create computer-based classrooms. Major issues associated with wireless technology include: (1) ensuring that a wireless office or classroom will have reliable access to the network under all conditions; and (2) dealing with the realities that some of the College's buildings, particularly the Mint Building,



may not possess properties which will allow a wireless environment to be successful.

The College's Technology Plan has identified the current specifications for a smart classroom and efforts are underway to install three smart classrooms in three main campus settings during the Spring 2002 term, and install eleven smart classrooms as a part of the new Center for Business and Industry in the Spring 2003 term. The expectation is that the first three smart classroom installations will serve as prototypes and allow the College to experiment with the configurations that are desirable to create maximum flexibility and usability for faculty and staff.

Proposed Solution

Ultimately, the College will have a distribution of classroom types including PC classrooms, laptop classrooms, smart classrooms and traditional classrooms. The latter will be outfitted with nothing more than standard AV equipment (e.g., overhead and video projection). The challenge in master planning is to develop an understanding of the appropriate distribution of classroom types and create the infrastructure flexibility so that as the required distribution changes (i.e., more smart classrooms and less traditional classrooms), the College can respond rapidly to the evolving need. In addition, the concept of what constitutes a smart classroom will change as technology and program requirements change. Demonstration classrooms in such areas as Science and Hospitality Technologies (HT) are likely to require a slightly different configuration in smart classroom design than will disciplines such as business and the social sciences. To convert from a traditional classroom to a smart classroom will require a reconfiguration of the lighting controls, ensuring that network connectivity and power outlets are in appropriate locations and the installation of a smart classroom podium with appropriate hardware at the front of the classroom. The addition of carpeting may be desirable. The prototype experiments in the Fall 2002 term will establish the cost for converting the classroom and provide more insight into the desired features of a smart classroom workstation.

A major infrastructure issue that will have to be addressed in order to continue the expansion of computer classroom resources into the West Building will be to redesign the cooling systems that are available for the West Building. The West Building is connected to the College's main campus chilling plant which allows cooling to take place only during the summer season. It is not possible to cool individual areas in the spring and fall when the central cooling system is not operating. A zoned direct-exchange (DX) system should be provided to classroom and instructional resources in the West Building to permit targeted cooling throughout the year. The modification to the West Building's HVAC systems could occur as a part of a building project on the west side of 17th Street, or could be treated as a stand-alone project.



Cost Estimate

Gradual Conversion of General-Purpose Classrooms to Smart Classrooms and
Additional PC/Laptop Classrooms as Needed

Construction Cost (per typical classroom) \$18,650.00

*(Note: All estimates are in 2003 dollars. On average, construction costs increase 1% to 2% per year.
See detailed cost estimate prepared by Turner Construction in Appendix A)*



Master Plan Update

2003
H2L2