VII.   STANDING COMMITTEES

A.   Academic and Student Affairs Committee

Report to the UW Regents on Online Learning

For information only.

Attachment
Presentation by Michael Offerman, Capella University

CAPELLA UNIVERSITY

University of Washington
Board of Regents

Michael Offerman
February 18, 2010

Background

Over twenty years in state universities—continuing education/extension
    University of Arizona
    University of Wisconsin

At the University of Wisconsin:

Created UW Learning Innovations
Supported 13 UW colleges and universities
Online degree programs
Faculty development and institutional entrepreneurship

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Capella University Experience

Last nine years at Capella University

    Adults
    Online
    Primarily graduate (80% of enrollment at Doctoral and Master's levels)
    For-profit (publicly traded on NASDAQ)
    Over 30,000 students
    70% female and 45% learners of color
    Average age is 39
    Average class size of 18

President from 2001 through 2007—grew from 2,000 to 22,000 students

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Compare Public and Online For-Profit University

- State University
  - Broad mission
  - Broad program array

  - Faculty role=teaching, research, public service
  - Very competitive admissions
  - Limited remediation
  - Curriculum development within departments
  - Student support is primarily face-to-face during regular office hours

- Online For-Profit University
  - Narrow mission (adults)
  - Only high demand programs
  - Emphasis on teaching—4 courses a term
  - Less competitive admissions
  - Extensive remediation
  - Curriculum development is centralized
  - Student support must be available online 24X7X365

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Compare Public and Online For-Profit University

- State University
  - Online has added costs
  - Steward state resources
  - State procurement rules
  - Focus on state

  - Limited access to capital
  - Institution Centric
  - Traditional college-going
  - Input based
  - Brand is tied to campus experience

- Online For-Profit University
  - Online efficiencies
  - Invest to build valuation
  - Agile procurement
  - Focus is national/international
  - Capital access vehicles
  - Student (customer) centric
  - Flexible and varied options
  - Outcome based
  - Must build brand without campus

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Summary of Differences

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Different missions
Different infrastructures (including student services and remediation)
Different governance and curriculum development
Different faculty roles
Different fiscal models

Both have opportunity or challenge:

How optimize different delivery modes to improve outcomes?

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Contemporary Reality

Higher and post-secondary education students don't fit the traditional stereotype

About 15% of higher ed students are 18–22, going to school full time, working only a few hours a week, and living on campus (Blog)

The other 85% are older, studying part-time, working at least 20 hours per week, and financially independent

Source: Stokes, Peter J., "Hidden in Plain Sight: Adult Learner's Forge a New Tradition in Higher Education", an issue paper for The Secretary of Education's Commission on the Future of Higher Education, 2006

They define the concept of " at-risk" for educational failure

They are our exclusive audience but you also serve them—must provide some level of flexibility and support for success

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Thoughts about online learning—what lessons?

Online versus blended

Tremendous advantage with the data generated and the potential data analytics
- Focus on learning outcomes
- Open data-information to "non-power-users"
- Program versus course focus (caution about loading)
- Curriculum maps enable transparency, analytics, re-packaging

Combinations of data analytics, transparency, outcomes-focus, granular content delivery, robust assessment may be transformative

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UW Online Learning: Degrees, Certificates, Courses

Distance learning degrees: 10
- Master in Construction Engineering
- Master in Aeronautics & Astronautics Engineering
- Master in Aerospace Engineering
- Master in Mechanical Engineering
- Master of Nursing, Master of Science (from the UW School of Nursing)
- Extended Master in Public Health
- Extended Master of Clinical Health Services (from the MEDEX Northwest Physician Assistant Program)
- Master in Strategic Planning for Critical Infrastructures
- Master of Library and Information Science (dMLIS)
- Master in Applied Mathematics

Distance learning certificate programs: 31
- Addiction and the Brain – on a contract basis only
- Advanced Research in Addiction and the Brain – on a contract basis only
- Biotechnology Project Management
- Brain Research in Education
- C++ Programming
- Construction Management
- Critical Infrastructures Protection
- Database Management
- Decision Making for Climate Change
- Editing
- E-Learning Design and Development
- Embedded and Real-Time Systems Programming
- Emergency Management
- Facility Management
- Geographic Information Systems
- Gerontology
- Guardianship (online + classroom combined)
- Heavy Construction Project Management
- Information Assurance & Cybersecurity
- Infrastructure Construction
- Marketing, Advanced Interactive (online + classroom combined)
- Medical Engineering: Biosensors and Biomaterials
- Oracle Applications Development (online + classroom combined)
- Paralegal Studies
- Project Management
- Psychological Trauma: Effective Treatment and Practice (online + classroom combined)
- School Library Professional
- SQL Server Specialist (Autumn-start; online + classroom combined)
- Sustainable Transportation (online)
- Urban Green Infrastructure
- Web Technology Solutions

- Distance learning undergraduate credit classes: 58 (some of these classes are listed in the Time Schedule)

- Online free courses (including mini courses): 12

UW DL Enrollments	2004	2005	2006	2007	2008	2009 (1st qtr)
Total UW DL	10865	9919	11892	11242	12369	2438

Report to the UW Regents on Online Learning

February 2010

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INTRODUCTION

Online learning has become a ubiquitous part of any discussion about the future of higher education. Provost Wise convened this working group to summarize the key issues surrounding online learning at the University of Washington. To do so, we have reviewed the extensive national literature on online learning; talked with leaders in the private sector and peer universities; and met with faculty and student leadership, through key Faculty Senate Councils (representing all three UW campuses) and ASUW.

What is online learning?

Online learning is a way of delivering most of the course content and instruction of a class using the Web. Though onsite, face-to-face classes at the UW and other institutions use educational technologies to enhance their classroom instruction, online learning courses are taught almost entirely online, and students seldom meet face-to-face with their instructors or their fellow students. Online learning includes a wide range of pedagogical techniques: websites and discussion boards; assigned readings accessible to students through the UW libraries' electronic reserve system; audio or video recordings of class sessions that students can view and/or download; course management systems that accept and immediately grade student assignments submitted electronically; and, at times, virtual worlds in which students take on identities as avatars and interact with their classmates digitally.

Online learning in its various forms has been steadily increasing. Over twenty percent of all U.S. higher education students were taking at least one online course in the fall of 2007. Despite the recession, demand for online classes has grown, not decreased; according to the forthcoming Sloan Consortium report, online learning growth continues to outpace overall growth in higher education.

This growth, however, has not been evenly distributed across the higher education landscape. Community colleges have consistently produced a disproportionate share of online enrollments; over half of all online students are currently enrolled by institutions offering associate degrees. Moreover, while public institutions have increased their online offerings in recent years, there has been an even more significant increase in attendance at for-profit online higher educational institutions. According to new research from the consulting firm Eduventures, for-profits' share of the online sector rose from 39 percent in 2008 to 42 percent in 2009, as the recession drove students back to college and severe budget cuts strained public universities.

Much attention has been paid to "open courseware" efforts from institutions such as MIT (through its OpenCourseWare project) and Carnegie Mellon (through its Open Learning Initiative). The Obama administration, numerous foundations (including the Hewlett, McDonnell, Mellon and Gates Foundations) and the National Science Foundation have all committed significant funding to open courseware initiatives. Indeed, the University of Washington was an early contributor to the open courseware movement; UWEO open courseware includes

13 free courses ranging from *Fluency with Information Technology* to *The American Civil War*.

Notably, however, neither MIT nor Carnegie Mellon offers an online degree program. MIT provides access to its syllabi and course materials, and CMU has developed eleven online courses, which are aimed at students who do not have access to high-quality instruction in these subjects at their home institutions. On the whole, open courseware expands the pool of resources available to instructors, but benefits primarily those institutions that could not otherwise develop such materials.

Fully online degree programs, which may integrate open courseware into its classes to enhance them, tend to succeed with very self-motivated, mature learners, and national growth has generally followed this pattern. Many public and for-profit institutions have successfully launched online degrees, especially master-level degrees, to working adults.

Such online programs and courses may expand access to students not otherwise able to enroll in residential programs, providing time flexibility for students with work and family responsibilities. They lessen the constraints on physical space and somewhat ameliorate the classroom shortage. Totally online courses provide a "green" alternative to driving to class, and may help institutions reach a more diverse population of students. Online education may also appeal to a new generation of students who have familiarity with technology and offers a learning environment that can be accessed repeatedly rather than once in a live context.

ONLINE LEARNING AT THE UNIVERSITY OF WASHINGTON

Given these benefits, the University of Washington, through UW Educational Outreach (UWEO), has been a national leader in online learning, with 9 degree programs, 31 certificate programs, and more than 12,000 students in 2008. UWEO has been an early adopter of several technological innovations over the past twenty years, with design and technology platforms paralleling many of the most significant trends seen during this period. Today's UW online learning uses Web conferencing, voice-over PowerPoint presentations, Virtual Worlds, UWEO's current learning platform, the fully integrated open-source learning management system known as "Moodle" that integrates blogs and wikis, and various types of social media applications such as Twitter and Facebook.

UW has also taken a leadership role in a number of institutional and corporate partnerships (see Table 1) dealing with online learning. Partnerships encourage sharing of online resources and benchmarks (streamed videos, syllabi, course readers, course resources, best practices, etc.) in a consortial effort, help expand the market for online learning among the collaborators and mitigate risk by spreading the sometimes very expensive costs of program development among a number of institutions. With its partners, the UW has created the first joint online certificate programs in the country.

Table 1. University of Washington online partnerships and initiatives.

- **R1edu.** In 1999, the UW started and continues to manage R1edu, a collaboration between 34 major AAU Research Institutions who offer online learning programs. (See attached for list of members.) Initiatives include:
    - Short Courses on the Environment (UW/Wisconsin/Rutgers)
    - R1edu Award
    - Course Search
- **Actions, Solutions and Growth (ASG).** In 2005, the UW helped start ASG, a consortium of large prestigious public and for-profit institutions pursuing a variety of partnerships, especially with online learning. (See attached for list of members.) Initiatives include:
    - Biotechnology Project Management (UW/UCSD)
    - Decision making for Climate Change (UW/UBC/UCI/Northwestern)
    - Certificate Program in Web Intelligence (UBC and UC-Irvine)
    - Sustainability Institute (UW/UBC)
- **Prentice-Hall.** The UW has partnered with Pearson/Prentice Hall, the largest publisher in the world, on several online initiatives, including:
    - LAAP Grant ($1.5M) dealing with Web-based curricula
    - iPhone Applications Certificate
- **Other Project Partners:**

Department of Labor ($1.5M grant)	Apex
Boeing	Heritage University
Chulalongkorn University	Sloan Foundation
WUN	

However, the University of Washington has not developed online versions of most of its courses for its matriculated undergraduate students. As a highly-ranked public research university with particularly heavy investments in high-cost instructional areas such as laboratory sciences, engineering, and medicine, as well as a commitment to growing the residential infrastructure with new dormitories and student union, UW attracts a more residential student population than that of most online degree programs. UW undergraduates are traditionally-aged (18-24), unlike the older, career-oriented, often fully employed students who drive online learning growth. In contrast, Capella University, a large online-only institution, refuses to admit students under 24 years of age to its courses, because in its view, students must be mature to be successful. Many of the community colleges who offer online learning also cater to a more mature, population of working students.

For the future, the University of Washington will likely expand its number of online learning classes to supplement, but not replace, the existing onsite classes. These online courses will enable students to have more flexible scheduling options and address the growing classroom shortage on campus. It will also cater to the UW students who can learn more effectively online and will attract at least a few UW students who could not otherwise attend the University of Washington because they find it hard to juggle family and work responsibilities. In an

experiment with seven undergraduate online courses in Autumn, both the students and faculty involved expressed interest in expanded online UW offerings to add to their largely onsite degree programs (though students also express a desire to limit the number of such courses they take over the course of their career at UW).

These online classes and others will add capacity to the UW, which will continue to maximize its physical classroom facilities with onsite courses and offer hands-on courses that cannot be easily transformed into online classes. Given the projected student population at the University of Washington, now in discussion for the 2Y2D UW strategic plan, the majority of onsite courses, some of them already enhanced by different technologies, will be supplemented by these new online offerings.

The costs of online learning

Surprisingly, no one has done an analysis about the relative costs of online learning versus onsite education in a nonprofit institution. Advocates have naively expected faculty to teach thousands of students as a cost-savings measure, and detractors have cited the million-dollar-a-course development costs of a few high-end online learning projects. Such broad arguments, however, do not help evaluate online learning at UW.

Rather than quote either detractors or supporters of online learning, the UW recently developed a comparative budget about the relative costs of an online versus onsite class, which represents the first comparative cost analysis between onsite and online courses at a nonprofit institution, comparing costs and revenues for a typical state-funded class at the University of Washington with identical enrollment, tuition, and faculty teaching costs for each format. In the end, the costs of the online learning course were slightly higher. Though it had no classroom costs, the online class had higher course development, technology and staff expenses than the onsite class. The UW has somewhat equalized the cost of online and onsite courses through the partnership model, mentioned above. A detailed budget follows at the end of this report.

THE FUTURE OF ONLINE LEARNING AT THE UNIVERSITY OF WASHINGTON

We expect that UWEO will continue to lead in the development of innovative programs for its target audiences. We need to find the best combination of online and face-to-face learning for traditional, matriculated undergraduate and graduate students at the University of Washington.
Our goal will be to attain maximum pedagogical effectiveness at the lowest possible cost. We have to find the optimum balancing point between cost and instructional effectiveness for the University of Washington at this moment in its history. Striking this balance is not a new challenge. It is an ongoing one, requiring constant readjustment as budgets expand or shrink, our student body changes, and educational technology evolves. The current moment, however, is a particularly dramatic one.

How we strike this balance will depend very much on the strategic decisions we make, beginning with the "Two Years to Two Decades" (2Y2D) conversations now underway. The larger questions raised in connection with these discussions will define the kind of university we want to be and the kind of students we want to teach and graduate. In fact, the topic of online learning emerged independently in multiple focus group sessions of the 2Y2D group on teaching and learning. The cost analysis clarifies the financial impact of online learning. Though we may want to expand our online offerings, lower cost should not be the central reason. We should teach online because it represents the best learning platform for our students.

It is clear that online learning has a role in the future of the University. We see a multi-tiered strategy for online learning at the University of Washington. We expect some increase in the number of fully online courses for matriculated students. The College of Arts and Sciences, for example, has already invested in the development of several such courses. We will also focus on the growth of hybrid courses, which combine face-to-face instruction with Web-based tools and resources. Finally, we expect an evolution of online learning from the text-based descendents of correspondence courses to new customized forms of learning appropriate to our core mission at UW – in the words of one faculty member, to shape "what teaching and learning will look like 20 years from now" and to be the leader for the "integration of technology in teaching."

APPENDIX: COST COMPARISON, ONLINE VS. ONSITE COURSE MODELS

Analysis and notes by David Szatmary, Vice Provost for Educational Outreach

	ONLINE	ONSITE
Program Name:	**300-level class[1] degree**	**300-level class[2] degree**
Degree or Certificate program		
Estimated Total Student Headcount:	**35[3]**	**35**
Resident students	**28**	**28**
Nonresident students	**7**	**7**
Total budgeted course enrollments	**35**	**35**
Number of Credits	**5**	**5**
Number of courses budgeted:	**1**	**1**
Gross Revenue	**45,948[4]**	**45,948[5]**
Licensing Fee	**0[6]**	**0**
TOTAL REVENUE & CONTRA REVENUE	**45,948**	**45,948**
Full-Time Faculty - Instruction	**21,702[7]**	**21,702**
Full-time Faculty- Course Development	**3,289[8]**	**965[9]**
Auxilary Faculty	**0**	**0**
Auxillary Faculty - Course Development	**0**	**0**
Teaching Assistants	**0**	**0**
Teaching Assistant - Course Development	**0**	**0**
Research Assistants	**0**	**0**
Instructional Designer for Course Development	**8,000[10]**	**0**
Technologist for Troubleshooting Technical Issues	**779[11]**	**0**
Program Administration	**1,112[12]**	**1,112[13]**
Technology Trainer	**779[14]**	**0**
TOTAL SALARY EXPENSES	**35,660**	**23,778**
Educational Facilities Costs	**0**	**4,444[15]**
Faculty/Instructional Office Costs per Class	**1,103[16]**	**1,103[17]**
Staff Office Space Per Class	**592[18]**	**63[19]**
Faculty/Instructional Costs for Office	**186[20]**	**186[21]**
Staff Costs for Office	**100[22]**	**11[23]**

Office software for faculty	13[24]	13[25]
Office software for staff	7[26]	1[27]
Faculty Travel - Annual Allocation	250[28]	250[29]
Supplies & Materials	50[30]	200[31]
Learning Management System	176[32]	0
Server time for LMS	58[33]	0
Technology for delivery	1,000[34]	0
Advising	2,725[35]	2,725[36]
UW Technology Charge for faculty	44[37]	44[38]
UW Technology Recharge Rate for staff	24[39]	3[40]
Special Library Needs	65[41]	0
General Library Resources	100[42]	100[43]
Exam Proctors	35[44]	0
Student Financial Aid	3,446[45]	3,446[46]
UW Overhead	2,573[47]	2,573[48]
TOTAL NON-SALARY EXPENSE	**12,546**	**15,160**
TOTAL GAIN/LOSS	**-2,258**	**7,010**

NOTES

[1] Assume that the class will be state-funded.

[2] Assume that the class will be state-funded.

[3] Represents the average class size for undergraduate courses at the UW - 35.5 students per class.

[4] Assume that all students will take approximately a full load of classes, and tuition will be distributed equally among all classes. I also assume that 80% of the students will be residents and 20% will be nonresidents. Special mandatory fees have not been included in this calculation (e.g. student & activities fee, IMA fee and the building fee). I have used only operating fee revenue (2010-11) for these calculations.

[5] Assume that all students will take approximately a full load of classes, and tuition will be distributed equally among all classes. I also assume that 80% of the students will be residents and 20% will be nonresidents. Special mandatory fees have not been included in this calculation (e.g. student & activities fee, IMA fee and the building fee). I have used only operating fee revenue (2010-11) for these calculations.

[6] Some online classes generate license fees but most do not, so I have not included any revenues here.

[7] Assume that a faculty member making $70K plus benefits will teach this course as part of a total teaching load of 4 classes per year. Obviously, this workload and salary will vary with the individual faculty member.

[8] Generally for the development of an online class, we have paid faculty one month's salary in additional pay. Also we assume that a faculty member will have to revise the class minimally during the next two years at $1000/year. We have finally assumed that this class will be taught once a year in the three-year period. We pay faculty for the development of these courses (unlike onsite courses in some cases) because the final class results in a product that has more identifiable intellectual property implications and could be licensed.

[9] For an onsite class, some faculty may receive release time to develop classes. In many cases, faculty do not receive additional time or money to develop a new class for an onsite offering. In this case, we assume that a faculty member receives the equivalent of one month salary to

develop a course. Faculty almost never receive additional release time to offer minor refinements to a course. As a result, I have conservatively estimated that the faculty development costs would be amortized over ten years with the class being offered once a year during this time period.

[10] Assume that an instructional designer will help with the user-centered design and provide suggestions for course formats, exit requirements, interactivity tools, etc. The initial development will cost $14K and minor revisions will be made for $5K in each of the next two years. The total cost has been amortized over 3 years. In some cases, the course will need major revision sooner, especially in technical areas, and in other cases the course may last up to 5 years without a major revision. These salary figures include the cost of benefits. Assume that the class will be taught once a year.

[11] Assume that a base level technologist at $60K/yr. will troubleshoot problems with the courses. Also, assume that each technologist can handle roughly 100 classes per year.

[12] I have assumed that the program administration costs for these classes would include a mix of professional and classified staff. One FTE would cost approximately $60,000/year and could handle 70 classes.

[13] I have assumed that the program administration costs for these classes would include a mix of professional and classified staff. One FTE would cost approximately $60,000/year and could handle 70 classes.

[14] Online classes need a learning management system to be operated effectively and efficiently. Some of these systems cost a significant amount of money (e.g. Blackboard) while others operate as open source (e.g. Moodle) but require integration into the other administrative systems such as a student database. I have assumed that the UW would use an open source solution such as Moodle. This cost represents the trainer who will work with faculty to train them on the LMS systems. I have assumed that this trainer could work with 100 faculty per year and would make $60K plus benefits per year.

[15] Based upon the rental costs for instructional space in downtown Seattle. This represents the cost for one room per quarter at full usage (8 a.m. to 10 p.m.), obviously a conservative number. With lower room utilization, the cost would increase. This number includes utilities.

[16] On an annual basis, the cost of a cubicle for professional staff in UW Tower would be approximately $4,411. I have divided this number by the number of classes taught by a faculty member.

[17] On an annual basis, the cost of a cubicle for professional staff in UW Tower would be approximately $4,411. I have divided this number by the number of classes taught by a faculty member.

[18] This line includes office space for the program administrator, the instructional designer, the trainer and the technologist, assuming that the technologist deals with 100 classes, the program administrator deals with 70 classes, the trainer with 100 classes and the instructional designer deals with 10 courses annually.

[19] This line includes office space for the program administrator.

[20] It generally costs $3,726 to outfit an average faculty office, not including research start-up. We assume that the furniture, computer, file cabinets and other materials will last a total of 5 years and have amortized these costs across the number of courses taught during this time period.

[21] It generally costs $3,726 to outfit an average faculty office, not including research start-up. We assume that the furniture, computer, file cabinets and other materials will last a total of 5 years and have amortized these costs across the number of courses taught during this time period.

[22] It costs approximately the same ($3,726) to outfit a staff office as it does for a faculty office. I have amortized these costs over 5 years and over the number of activities that the instructional designer, the trainer, the technologist and the program administrator perform during this time period.

[23] It costs approximately the same ($3,726) to outfit a staff office as it does for a faculty office. I have amortized these costs over 5 years and over the number of activities that the instructional designer, the trainer, the technologist and the program administrator perform during this time period.

[24] According to our estimates, it will cost $50 per person for software and licenses each year. This amount has been multiplied by the number of faculty and then divided by the number of courses offered annually.

[25] According to our estimates, it will cost $50 per person for software and licenses each year. This amount has been multiplied by the number of faculty and then divided by the number of courses offered annually.

[26] According to our estimates, it will cost $50 per person for software and licenses each year. This amount has been multiplied by the number of staff (program administrator, trainer instructional designer and technologist) and then divided by the number of activities performed annually.

[27] According to our estimates, it will cost $50 per person for software and licenses each year. This amount has been multiplied by the number of staff (program administrator) and then divided by the number of activities performed annually.

[28] Assume that the average faculty member receives $1,000 in travel annually divided by the number of courses taught (4).

[29] Assume that the average faculty member receives $1,000 in travel annually divided by the number of courses taught (4).

[30] Though the online class can more efficiently distribute printed material (i.e. no xeroxes) and show videos online, it still needs to secure copyright clearance for at least some of its material. Other materials may be free due to their open source nature.

[31] I have assumed that a faculty member will spend about $200 per course on such materials as xeroxes, films and other instructional aids. This includes copyright clearance.

[32] Online classes need a learning management system to be operated effectively and efficiently. Some of these systems cost a significant amount of money (e.g. Blackboard) while others operate as open source (e.g. Moodle) but require integration into the other administrative systems such as a student database. I have assumed that the UW would use an open source solution such as Moodle. The costs represent an amortized expense of integration and then the ongoing technology costs of support.

[33] This costs represents the per course cost of hosting a class on the server of a cost-effective vendor such as Moodle Rooms. It costs approximately $1.67 per student for this hosting, though the number decreases with an economy of scale.

[34] This cost will vary widely by the type of technology that a faculty member chooses. For example, the faculty member may choose to a print format with some minimal animations, which would incur little additional cost. Likewise, the use of open-source resources also would cost little more. However, if the faculty member chooses to videotape and then stream his/her own class or use Virtual Worlds (e.g. Second Life), the costs could be considerable. For example, the costs of an island and the buildout of that island in second life would have to be amortized over a specific number of courses, and the more courses in this format, the lower the cost until another island would be needed. For the purposes of this budget, I have been very conservative and estimated $1,000 per course for the cost of additional technology.

[35] Assume than one advisor can deal with 1000 students per year in an online or onsite capacity.

[36] Assume than one advisor can deal with 1000 students per year in an online or onsite capacity.

[37] I have taken the total number of faculty headcount and multiplied it by the recharge rate and then divided by the number of courses that faculty teach each year (4). Though the recharge rate has not yet been established, I used $175/person/year as an estimate.

[38] I have taken the total number of faculty headcount and multiplied it by the recharge rate and then divided by the number of courses that faculty teach each year (4). Though the recharge rate has not yet been established, I used $175/person/year as an estimate.

[39] I have taken the total number of staff (4) headcount and multiplied it by the recharge rate and then divided by the number of activities that each staff performs annually. Though the recharge rate has not yet been established, I used $175/person/year as an estimate.

[40] I have taken the total number of staff (4) headcount and multiplied it by the recharge rate and then divided by the number of activities that each staff performs annually. Though the recharge rate has not yet been established, I used $175/person/year as an estimate.

[41] Online classes many times have special library needs because students cannot come physically to the library. At the UW we have a dedicated position in the library for all online classes that helps instructors and students identify and establish electronic material resources.

[42] I have taken the total library costs for materials and staff and divided by the total number of headcount students and assumed that a student takes 6.93 classes per year (if we have 47,361 students and approximately 36,438 student FTE).

[43] I have taken the total library costs for materials and staff and divided by the total number of headcount students and assumed that a student takes 6.93 classes per year (if we have 47,361 students and approximately 36,438 student FTE).

[44] At this point, we do not have an inexpensive solution for exam verification. We only have such items as retinal verification, etc. As a result, we ask students to go to a pre-assigned physical site for identity verification for exams. Though the sites generally participate for free, we need an exam proctor coordinator who establishes and verifies sites and sometimes sends exams. This half-time employee can deal with approximately 700 classes per year.

[45] Generally, the UW attributes 7.5% of total tuition revenues to student financial aid.

[46] Generally, the UW attributes 7.5% of total tuition revenues to student financial aid.

[47] This overhead represents general costs that cannot be easily applied to specific activities in an activities-based budgeting model. Such costs may include the President's and Provost's office, the human resources office, general administrative systems, emergency management, disability services, the office of planning and budgeting, the attorney general's office, etc. These costs would apply to both online and onsite classes.

[48] This overhead represents general costs that cannot be easily applied to specific activities in an activities-based budgeting model. Such costs may include the President's and Provost's office, the human resources office, general administrative systems, emergency management, disability services, the office of planning and budgeting, the attorney general's office, etc. These costs would apply to both online and onsite classes.