Pilot study of faculty perspectives on e-learning graduate degrees in wildlife and natural resources

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Executive summary

The purpose of this study was to clarify the factors that help or hinder faculty participation in the DE program of Wildlife and Fisheries Sciences. Objectives focused on (1) structure of the program, (2) faculty incentives and (3) benchmarks for success.

The design of this study followed a participatory research approach. Semi-structured interviews were conducted with 30 employees (faculty and staff) within six COALS departments (ALEC, ESSM, POSC, WFSC), three departments in other TAMU colleges on the College Station campus (OCNG, STAT), and two departments on the Galveston campus (MARB, MARS). Questions focused on the three objectives (above). Responses were coded by category and sorted for thematic analysis. Participants assisted in compiling information about DE programs. Individuals were not the subject of the investigation.

Three scenarios for the structure of DE programs emerged from this study: (1) "minimal structure", (2) "transitional structure" and (3) "ideal self-sustaining structure". Participants described the WFSC DE program as illustrating the "minimal structure" scenario. Other examples of the "minimal structure" scenario included DE programs in ESSM, POSC, OCNG, MARS, MARB, each illustrating diversity within this category. The STAT DE program illustrated the "ideal self-sustaining" scenario, generating sufficient income for the department to hire staff and graduate teaching assistants. The "transitional structure" was illustrated by the ALEC Doc-at-a-Distance program. This example illustrated how a transition was made from "minimal structure" to "ideal self-sustaining structure" by obtaining grant support for staff and student fellowships, with the intent of transition to a self-sustaining structure after the grant support ended.

Incentives for faculty participation in DE programs included: (1) personal satisfaction with the intellectual and technical challenge, (2) sufficient student registration to fill courses that otherwise had been cancelled, (3) flexibility in scheduling teaching/learning around time constraints of field research (both faculty and graduate students), (4) financial resources for lab activities to continue between grants, (5) capacity to recruit self-supported and/or quality students with assurance of continued support between fellowships and grants, (6) summer salary for faculty on 9-month appointments, (7) national visibility within networks of practitioners and scientists, (8) enhanced collaboration within and between departments, and (9) opportunity to fill the needs of a specific niche market with access to resources for self-supported education (e.g. Certificate in Military Lands Sustainability). Disincentives included: (1) reduced prestige associated with an image of low-quality "mass education", (2) time drain, (3) technology challenge, (4) little return on effort in terms of publications, (5) pressure to accept students that did not contribute to lab productivity, (6) inefficient representation in decision-making about distribution of funds from fees, (7) insufficient administrative support, and (8) insufficient recognition in the tenure and promotion process.

There was a strong basis for consensus that success of the WFSC DE programs (MWSC, MNRD) should be assessed in a manner equivalent to resident degree programs (MS, PHD) in terms of (a) academic rigor, (b) capacity building, and (c) supplying well-qualified applicants for employment. Procedures for program assessment have been initiated through the university-wide WEAVE systems providing a standard for comparison across accredited universities. Additional potential benchmarks for success recommended by interviewees included: (1) student career-building and satisfaction, (2) quantity and quality of courses, (3) faculty advancement and satisfaction, and (4) comparison with other DE programs in wildlife and natural resources.

Strong recommendations resulting from this study call for strategic use of existing resources to leverage funding for transition to a more self-sustaining scenario that would generate income for the department. Recognizing that the current structure is minimal, decisions need to be made in the following categories: (1) effective use of the existing funds in DE accounts and distribution of future fee income, (2) formal recognition of the DE program within the decision-making structure of the department, (3) clarification of the goal for program development (e.g. transitional scenario), (4) mechanisms within the tenure/promotion process for recognizing faculty/staff service to the DE program, (5) equivalent assessment of all degrees within the department (MWSC, MNRD, MS, PHD), (6) adaptive management approach to continuous quality enhancement, (7) mechanisms to assess the niche markets where growth in the program would be most lucrative in developing a self-sustaining and income-generating scenario, and (8) proactive communication about the manner in which the WFSC DE program helps implement the COALS strategic plan and the university goals for Vision 2020.

Introduction

Members of the distance education network within the College of AgriLife Sciences (COALS) at Texas A&M University (TAMU) need a better understanding of the current status of distance education, which varies within the specific context of each discipline and department. Key elements of the COALS strategic plan (COALS 2010) include: (a) broaden access to academic programs beyond the College Station campus, (b) expand out-of-classroom learning experiences, (c) foster real-world interdisciplinary problem-solving and (d) expand distance-education offerings. According to the view that faculty decisions are made in a complex entrepreneurial environment (Hansson and Monsted 2008), administrators are faced with choices about how to best enable or direct faculty to implement recommended strategies (Plowman, Solansk et al. 2007).

Local issues reflect the challenges appearing in global networks providing open educational resources in support of science (Scanlon 2012). Certain COALS faculty engaged in the innovative use of online technology, have provided inclusive and practical educational opportunities for students pursuing degrees in wildlife and natural resources for over a decade (Appendix A). However, due to faculty turn-over, new faculty are faced with the dilemma of how to efficiently allocate time to teaching while meeting the expectations of a Tier 1 research university. Administrative decisions about the type of support for faculty could result in stagnation or expansion of the DE program within specific departments. Local issues reflect the challenges appearing in global networks providing open educational resources in support of science (Scanlon 2012). Although we have a reasonable understanding about general educational needs in the discipline of natural resource management (Lopez 2001; Anderson, Cooch et al. 2003; Kroll 2007), more specific information is needed about stakeholder views concerning distance education within this loosely connected "community of practice". This report presents a preliminary case study of the COALS Department of Wildlife and Fisheries Sciences.

Purpose

The goal of this study was to better understand the factors that facilitate and inhibit faculty participation in the DE programs designed for non-resident students pursuing careers in wildlife and natural resources. By focusing on a case study of Wildlife and Fisheries Sciences and associated departments at Texas A&M University, the intent was to detect emerging issues that may interest a broader network of participants. Specific objectives were: (1) to characterize the structure of several existing systems for delivery of distance education graduate programs, both within the same university (different academic disciplines) and across universities (similar academic discipline), (2) to identify issues considered by faculty participating in graduate distance education programs, including how the issues might change as each program matures, and (3) to analyze the degree of faculty consensus on a variety of benchmarks for measuring program success.

Participatory research approach

This pilot study was conducted using a participatory research approach that was grounded in the experience of stakeholders actively engaged in practical activity (Kezar 2000). Participants were recruited from a list of stakeholders (staff, faculty, administrators) generated by (1) documents in the public domain (i.e. websites, brochures, handouts, course schedules), and (2) the "snowball" technique of adding names that emerged during interviews. All stakeholders were invited to schedule a personal interview, in a semi-structured, in-depth format. The questions addressed the objectives stated above. Interviewees included 30 stakeholders from eight departments, distributed across three administrative units, including: COALS (ALEC, ESSM, POSC, WFSC), other College Station colleges (OCNG, STAT) and Galveston campus (MARS, MARB). Aggregate characteristics of the entire stakeholders population are provided in Appendix B.

The interview data were analyzed using a procedure similar to the content analysis structured by use of the software Atlas.ti. Primary codes were the three objectives of the study (above). Within the categories of primary codes, subcodes were chosen to capture more detail and specifics. Themes were entered into an excel database and sorted across all interviewees. The following narrative was based on this analysis.

Program structure

The structure of the WFSC DE program was described as minimal or unknown. From the ways that interviewees talked about the structure of DE programs in general, three scenarios emerged as described further below.

"Minimal structure": independent faculty entrepeneurs

Informed interviewees described the WFSC DE program as shaped by innovative individual faculty members, working more or less autonomously. Prospective students contact (or are referred to) the departmental Academic Advisor II. Currently, this one staff member processes all email contacts, the applications, refers students to potential faculty advisors, maintains a database on individual applicants, sends out a spreadsheet with the applicant pool to faculty members to help place students with advisors, maintains the database, compiles information requested by faculty, and helps with solving problems that arise in the process.

Previously, the correspondence associated with recruiting and retaining students was processed by an experienced senior professor, who is now retired (although he has been rehired to teach a course in 2012C). The WFSC office of academic advising handles all graduate students, not only those in the DE program. There are no staff hired specifically for the DE program in WFSC.

The goals and courses offered through the WFSC DE program were more apparent to some than to other interviewees. No formal processes for program evaluation were identified by interviewees, at least for the DE program as separate from the WFSC graduate program as a whole. In the external review of the department, some issues were raised by students with respect to the DE program and stacked courses in general. These issues were examined and resolved by the WFSC Graduate Affairs Committee. The result was an updated course list for all WFSC graduate courses and 3-year teaching plan (Appendix D), providing a code for the manner of delivery of courses (face-to-face, blended, web only). The WFSC courses delivered via web technology are one portion of the courses available in an on-line from all departments. Students in the WFSC DE program may choose from courses taught in nine departments (Appendix E). The availability of these courses each semester is documented in the Howdy portal; however, there is no 3-year teaching plan for courses outside WFSC. Transfer courses are available for DE students at other institutions in the national Natural Resources Distance Learning Consortium.

Interviewees noted there are several hubs within this loose network of WFSC stakeholders. The Military Lands Sustainability program provided a well-defined list of courses required to earn a certificate, and typically one faculty member serves as the Chair of the Graduate Advisory Committee for all students on this track. The joint Master of Natural Resources degree has linked a handful of faculty who refer students to either the WFSC or ESSM graduate coordinators, depending on which department was more appropriate for each student. There has been no formal structure to link the stakeholders in the separate departments for oversight of the joint MNRD degree. Each department assesses the MNRD degree program separately. In ESSM the MNRD degree assessment was folded into the MS assessment on WEAVE. In WFSC, the process for separate assessment of each degree program through WEAVE has been in a developmental stage. Otherwise, each faculty member has been responsible for supervision of the DE students for whom the faculty serves as graduate advisor.

Other hubs have been linked through web-delivery of courses for students who are not in the DE program. For example, graduate students resident on the TAMUG and CC campuses register for web-delivered courses relevant to the MIDP program which links the three campuses. This nascent "marine" hub serves students in the WFSC DE program, and in turn benefits from the web-delivery of courses, so faculty members are "indirect" stakeholders in the development of the WFSC DE program. Several interviewees noted that the "marine" hub might be a lucrative area for growth in the DE program, potentially recruiting DE students from employees in federal agencies such as NOAA. Other hubs are loosely connected through DE and resident students who participate in the web-delivered courses. For example, the Seminar in Cross-Cultural Communication links students in the Applied Biodiveristy Sciences program, the Galveston campus, and DE students.

DE programs in other departments within COALS were also described as fitting in the category of "minimal structure". Examples of the variation across these departments are described in Appendix F.

"Transitional structure": strategic plan of growth to meet market demand

The "Doc-at-a-Distance" program within ALEC illustrates the "transitional structure" scenario. This program was initiated by a grant, which brought together faculty from two campuses. The curriculum and program were designed carefully to include educators who were employed so could not attend courses on-campus, but were highly motivated to complete doctoral studies. The requirement for contact hours have been fulfilled by interaction of students and faculty at professional meetings, as well as meetings of students with graduate advisory committees. The program has been highly structured, with a core curriculum and regular meetings of the core faculty. Each year, the student cohort has been selected from a pool of applicants reviewed at a meeting of the core faculty. Program assessment is informal and effectively occurs during the regular meetings of the core faculty. This structure is "transitional" in the sense that it started with minimal structure and through the mechanisms set in place during the period of the grant, is expected to transition to a self-sustaining program at the end of the grant period.

Several options were identified as potential areas for growth of the WFSC DE program (Appendix G): (1) marine stock assessment, (2) biodiversity status assessment and (3) wildlife and fisheries management (Appendix G). The potential niche market for the marine stock assessment area would be government employees in agencies such as NOAA. As many of these employees are time-restricted and already have advanced degrees, the option of a certificate program may be more marketable than a MWSC or MNRD DE degree. For those who do want a master's degree within this niche market, it might be desirable to create another DE degree with a name that would be more of an asset (e.g. Marine Stock Assessment, Marine Systems, Marine Fisheries, Aquatic Productivity Assessment). In contrast, the potential for growth in the area of biodiversity assessment would target a global market within the network linked to IUCN. A clear immediate need is for a DE course that trains participants in the status assessment procedures used for the Red Data Book. Whether this would develop into a certification program or an emphasis within the MWSC degree is still under discussion. A potential certificate/degree that meets the needs of certification for wildlife and fisheries biologists (wildlands/urban interface) was mentioned informally, outside interviews.

A major consideration from the COALS perspective would be to foster growth in markets that serve participants outside Texas. The reason for this is the higher differential tuition fees collected from out-of-state DE students compared to in-state DE students (Appendix C). Since the university and college collect a set percentage of these fees before the income is passed on to the department, it is to the benefit of all levels of the administrative hierarchy to target the higher end market of out-of-state residents. The fees collected from undergraduate students enrolled in DE courses is minimal compared to the potential income to be generated by targeting a market that includes a high percentage of out-of-state residents. Another consideration would be that the stated purpose of the WFSC DE graduate degrees has been capacity-building for employees already working within the area of natural resources. Participants who are already employed are more likely to be able to afford the higher differential tuition, or benefit from employer education programs that pay for tuition.

A strong argument could be made for using the model from the "Doc-at-a-Distance" program, to obtain a grant to facilitate the transition of the WFSC DE program from a scenario of "minimal structure" to a scenario of "ideal self-sustaining structure". The benefits of successful grantsmanship would address issues of (1) faculty incentives, (2) recruitment of high-quality students from national as well as global markets, and (3) enhanced income flow at three levels of administration (departmental, college, university). Benefits of this approach would be an alignment of the WFSC DE program with the COALS strategic plan to meet the TAMU goals of Vision 2020.

"Ideal self-sustaining structure": income-generator for the department

Interviewees spoke about the desire to develop an ideal structure for the WFSC DE program, which would be self-sustaining and would generate income for the department. As an example, they referred to the DE program in the STAT department. The STAT DE program has developed over decades into an income-generating program with a budget on the order of a million dollars. These funds support dedicated staff who coordinate recruitment, retention and assessment

activities. The income generated through this program has been used to support graduate teaching assistants during a period of budgetary shortfall. Interviewees noted that it has taken the dedicated and persistent work of one "faculty champion" to foster development of the STAT DE program to this self-sustaining and lucrative scenario. Faculty are provided with incentives for developing and teaching web-based courses. This scenario was described as ideal by interviewees; however, it was noted that the market for WFSC graduates might differ from the market for STAT graduates.

Incentives for faculty participation

Incentives for faculty participation in DE programs included: (1) personal satisfaction with the intellectual and technical challenge, (2) sufficient student registration to fill courses that otherwise had been cancelled, (3) flexibility in scheduling teaching/learning around time constraints of field research (both faculty and graduate students), (4) financial resources for lab activities to continue between grants, (5) capacity to recruit self-supported and/or quality students with assurance of continued support between fellowships and grants, (6) summer salary for faculty on 9-month appointments, (7) national visibility within networks of practitioners and scientists, (8) enhanced collaboration within and between departments, and (9) opportunity to fill the needs of a specific niche market with access to resources for self-supported education (e.g. Certificate in Military Lands Sustainability). Each of these are described in more detail below.

Personal satisfaction

Several interviewees talked about the personal satisfaction that rewards them for teaching DE students. Themes included (1) intellectual challenge of packaging course content in a manner that supports independent study, (2) rising to the technical challenges associated with web-delivery of courses, (3) integrating the experiences of students who are employed practitioners, in a manner that also benefit the resident students in blended courses, (4) responding to the demand for continual quality enhancement as technology and students needs change, and (5) integrating best practices in pedagogy for DE delivery.

Interviewees also varied in the sources of satisfaction associate with web-delivery of courses. Some believed they had more satisfying exchanges with DE students. Others were satisfied by the relative freedom that an established DE course provides for the instructor. The structure of DE courses varied along a continuum of minimal interaction to highly interactive. Some interviewees believed that it was the diversity of educational experiences for students, which was a major asset in the WFSC DE program.

Fill courses

The motivation for several faculty initially arose when the courses they taught did not fill with resident students. Whether it was schedule conflicts, low demand or ineffective marketing of these courses, the problem of "cancelled courses" was solved for these faculty.

Flexibility in scheduling around field time

Both faculty and students encounter problems scheduling fieldwork around course schedules. For example, students in OCNG were expected to be off-campus on long research cruises. In WFSC, the optimal time for field research is usually in the spring or fall when key courses are offered. Web-delivery was mentioned as a way of resolving scheduling problems.

Support for lab

In developing a research program that dovetails well with teaching, faculty need support for expenses such as travel to professional meetings and field sites, field and lab supplies, software and communication devices. To provide incentives for faculty with these needs, DE fees accruing from the DE courses taught by each facultyhave been distributed to the individual faculty accounts. Interviewees were motivated to enhance the quality of their teaching to attract students to their courses, with the direct benefit of the fees accrued.

Recruit quality students

Interviewees believed that the DE program allowed them to recruit high quality and mature students who already had a strong work ethic, practical experience and transferable skills from the workplace where they were simultaneously employed. Another incentive was to use funds in the DE faculty account, to support resident students in the gaps between fellowships, assistantships and grant funding. Without this "fall back" plan, interviewees believed they might be less successful at recruiting quality students courted by other institutions with more secure options for student support.

Summer salary

Faculty on nine-month appointments expressed an interest in being able to use fee funds in their individual accounts, to pay for summer salary. This was mentioned as a potential incentive for putting a course on-line, which otherwise would not have been available to DE students.

Visibility within networks of practitioners and scientists

Several interviewees believed that their research program benefitted from the national visibility provided by DE students employed at national labs and/or the private sector. Serving as a graduate advisor for an employed practitioner not only expanded networks of contacts, but also held promise for enhanced grantsmanship.

Collaboration within and between departments

Several faculty noted that opportunities for collaboration with other departments had been enhanced by faculty interactions through graduate advisory committees. Tangible results of this type of incentive would be a coauthored grant proposal or manuscript.

Disincentives for faculty participation

Disincentives included: (1) reduced prestige associated with an image of low-quality "mass education", (2) time drain, (3) technology challenge, (4) little return on effort in terms of publications, (5) pressure to accept students that did not contribute to lab productivity, (6) inefficient representation in decision-making about distribution of funds from fees, (7) insufficient administrative support, and (8) insufficient recognition in the tenure and promotion process. Each of these disincentives could also be interpreted as the opposite of an incentive, providing additional themes for facilitating faculty participation by minimizing disincentives.

Benchmarks for program success

There was a strong basis for consensus that success of the WFSC DE programs (MWSC, MNRD) should be assessed in a manner equivalent to resident degree programs (MS, PHD) in terms of (a) academic rigor, (b) capacity building, and (c) supplying well-qualified applicants for employment. Although procedures for program assessment have been initiated through the university-wide WEAVE systems providing a standard for comparison across accredited universities, only one interviewee was aware of this process. Additional potential benchmarks for success recommended by interviewees included: (1) student career-building and satisfaction, (2) quantity and quality of courses, (3) faculty advancement and satisfaction, and (4) comparison with other DE programs in wildlife and natural resources.

Student career-building and satisfaction

Interviewees identified multiple potential benchmarks for program success, related to students: (1) number of students applying, (2) number of students registered each year, (3) quality of students recruited, (4) student testimonials that they would rather get a degree from TAMU than another instititution, (5) student retention, (6) total students graduated during a specific time period, (7) time to completion of the degree, (8) placement of graduates in relevant jobs, (9) career advancement for students already employed, (10) student grades, and (11) quality of the professional paper. However,

other interviewees pointed out some of the challenges of using benchmarks associated with career advancement. For example, fluctuations in the job market might affect both the number of students applying and the number placed in relevant jobs. Without a clear understanding of the job market, these interviewees believed it would be hard to assess the program on the basis of career placement.

Some interviewees believed strongly that student satisfaction was most important. Associated with this belief was disbelief that the job market was stable enough to be analyzed in terms of supply and demand. These interviewees stated that students simply needed to develop transferable skills associated with higher education, enhancing their resiliency to apply to a variety of jobs that might not even be anticipated by academics. As long as graduates were satisfied with their personal advancement in career building, then the program could be considered successful. This opinion was associated with a strong ethical sense of the value of "inclusion", providing opportunities for higher education that otherwise would not be accessible to students who cannot be resident on a campus due to family, health or employment constraints.

Mechanisms for tracking students after graduation were described as a major challenge. Although this might be desirable, it would be time-consuming and would require additional manpower. A similar statement could be made about a survey to assess student satisfaction at key points during the degree process.

The Military Lands Sustainability program, although not widely familiar to interviewees, was described by some as a good example of where a clear employment opportunities had been identified and there was a high degree of certainty about the type of education that students would need to be competitive for these jobs. However, other interviewees pointed out that not all our students in active duty military or reserves are interested in employment on DOD properties. Education during military service also appears to be a route for a career change, an option attractive to many of our students.

Courses (quantity and quality)

Increases in the number of courses offered through web-based learning was identified as a potential metric to assess development of the WFSC DE program. This was seen as desirable in response to complaints from students that options for courses were limited during some semesters. Growing the number of course offerings was identified as a way to recruit more students.

Other interviewees pointed out that it is not the number of courses, rather the subject matter needed to round out a coherent curriculum that should serve as a benchmark for success. They pointed out that without a clear definition of the goals of the DE program and the diverse hubs within it, there are barriers to identifying which courses need to be added.

Some interviewees expressed concern that faculty outside the DE program were critical of the quality of education possible through web-based delivery. Detractors equated DE with the "mass education" associated with open universities, citing the University of Phoenix as an example. To address quality concerns, several interviewees cited studies where student achievement was compared between sections with web-based delivery and sections that were face-to-face. Other interviewees recommended peer evaluation across courses delivered via different modalities. Resources available through the Center for Teaching Excellence were identified as potentially useful in this context.

Faculty advancement and satisfaction

An increase in the number of faculty offering web-based courses and serving on the graduate advisory committees of DE students was identified as a potential benchmark for success. However, interviewees also stated "DE is not for junior faculty" referring to the time commitment required to prepare and maintain materials on-line.

Faculty referred to other DE programs (e.g. POSC) where staff take full responsibility for the web-delivery of lectures and course materials that faculty prepare for face to face delivery in the classroom. With the extra administrative burden removed, faculty in these programs have been able to focus on the activities required for advancement (e.g. grants and publications). Others pointed out that course materials developed for web-delivery should be different than materials developed for lecture courses. They believed that certain faculty receive more satisfaction from the creativity and flexibility

provided by on-line tools, and would be less likely to be inspired by a standard format for on-line delivery of materials developed for a face-to face-classroom (e.g. the POSC procedure).

Several interviewees believed that faculty receive satisfaction from watching their students progress smoothly through the stages of intellectual development associated with graduate education. They suggested that faculty satisfaction in student progress could be evaluated using a survey instrument. However, they also recognized that it would take additional manpower to develop, administer and analyze the results from surveys.

Comparison with other programs

Some interviewees noted that the WFSC DE program should be compared with other equivalent degree programs in the same academic field. The mechanisms for making such comparisons were not identified. The Natural Resources Distance Learning Consortium was identified as a potential network to identify other similar programs. This also would provide venue for identifying what is unique about the WFSC DE program and how to target niche markets that are not already covered by existing programs at other institutions.

Financial benchmarks were identified as potential metrics for comparing DE programs within COALS. The cumulative income generated through Differential Tuition fees could be used as a standard metric for comparing programs. However, caution was also raised, because it would not be fair to compare DE programs in different stages of development, or academic disciplines associated with very different job markets. Interviewees also noted that there could be unforeseen consequences if informal administrative policy was to "feed the race horses and starve the nags". This could result in positive feedback loops for more mature programs and negative feedback loops for innovative fledglings.

Recommendations

1. Decide on effective use of the existing funds in DE accounts and distribution of future income from fees. Options include: (1) hire one full-time short-term employee dedicated to developing a business plan and granting strategy within 1-2 years, (2) hire part-time staff (possibly a graduate assistant) to conduct assessments that would build a case for the lucrative investment of matching funds from upper administrative levels over multiple years, (3) contract with a consultant to develop a strategy to obtain grant funds to tap into promising future niche markets, (4) establish a procedure for disbursing existing funds to individual faculty on the basis of competitive proposals to fund projects that would benefit the DE program as a whole, (5) use existing funds to hire part-time student assistants to help existing staff, thereby freeing up time for program assessment and continuous quality enhancement, (6) hire graduate student(s) to administer the assessment procedures for all four graduate degrees in WFSC, (7) buy out faculty time to focus on DE program development, and (8) rehire retired faculty to focus on DE program development.
2. Formalize a committee structure to facilitate (a) decision-making within the network of stakeholders (faculty and staff) and (b) communication between stakeholders and administrative decision-makers. Options might include: (1) ad-hoc committee reporting through the Graduate Affairs Committee to the Department Head, (2) separate departmental committee reporting to the Department Head, (3) both an ad-hoc committee to the Graduate Affairs Committee, and an ad-hoc committee reporting to the Undergraduate Affairs Committee, or (4) a representative on the advisory committee that meets with the Department Head.
3. Clarify the target for development of the DE program within the next 5 years. Optional scenarios might include: (1) "minimal structure", (2) "transitional structure", or (3) "self-sufficient structure". Currently the WFSC DE program fits in the category of "minimal structure". The ideal target would be development to the point where the program is self-sustaining and generates income for the department. However, to achieve that ideal target, the program will have to be pushed through the "transitional structure" by one or more "faculty champions of the cause".
4. Identify mechanisms within the tenure and promotion process for recognizing service to the DE program. Although criteria for tenure and promotion rewards leadership in research productivity over achievements in teaching and service, several under-utilized options should be strengthened, including: (1) publications related to assessment and program development, (2) nominations for awards recognizing leadership in service, and (3) a positive tone in annual evaluations recognizing service to the DE program as beneficial to the department, college and university.

5. Implement equivalent assessment of all degrees within the department (MWSC, MNRD, MS, PHD). Individual faculty members can choose to align the assessment of students within courses, with the criteria selected for input into the WEAVE assessment of TAMU relative to other universities. These data would also be useful for comparing courses delivered in three modes: (1) no web component, (2) blended approach and (3) solely web-based delivery. Comparison of student achievement within courses should be compared for students in each of the four degree programs. The hypothesis that the DE program is somehow inferior to other degree programs should be tested.
6. Implement an adaptive management approach to continuous quality enhancement. At the point where weaknesses in the DE program have been identified, stakeholders should apply the principles of adaptive management to (a) set goals, (b) choose options for interventions, (c) monitor consequences of interventions and (d) decide whether goals have been met. This cycle should be repeated on a regular basis (e.g. annually) to provide the information needed for informed decisions that enhance quality.
7. Identify mechanisms to assess lucrative niche markets. Stakeholders should determine where growth in the program would be most lucrative in order to develop a self-sustaining and income-generating scenario. For example, the Military Lands Sustainability curriculum has been very effective for attracting veterans and in-service personnel eligible for educational benefits. Faculty should be encouraged to propose and develop innovative strategies for growth to meet the educational demands in other sectors (e.g. assessment of marine stocks, status assessments for at-risk species). Issues regarding distribution of income generated by student fees would need to be addressed if some markets are stronger than others. WFSC should become a formal member of the Natural Resources Distance Learning Consortium.
8. Enhance proactive communication about implementing the COALS strategic plan. By aligning the DE program with the goals of the COALS strategic plan, WFSC should be recognized as helping to achieve the university goals for Vision 2020.

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Notes on author

Jane Packard is Associate Professor in Wildlife and Fisheries Sciences and Director of the Biodiversity Stewardship Lab at Texas A&M University. She has taught courses using distance education technology for over 8 years and her research focuses on collaboration within communities of practice that cross cultural boundaries at several geographic scales.

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APPENDIX A

Distance Education (DE) for Texas A&M Students and the Community: Progress and Potential

By: Dr. Clark E. Adams, Professor, Dept. of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX

Texas A&M Students

Introduction

This overview was written drawing on a 15-year involvement in DE education by Dr. Clark E. Adams . Dr. Adams has a 48-year career in classroom teaching including high school, junior college, four-year college, and TAMU university. He is one of the DE course designers and instructors for WFSC/COALS. The following is a review of how the online courses, offered by Dr. Adams, have benefited students enrolled on and off campus, and extended TAMU educational opportunities for the whole community. This paper was written using WFSC 420/630 Ecology and Society and WFSC 405/635 Urban Wildlife Management as DE online course examples.

Course components consist of a required textbook with study guide, taped lectures produced by KAMU TV Services, lecture notes, syllabus, and six examinations. Instructor contact with students is maintained 24/7 using the Blackboard Vista email service . Except for the textbook, all course components are provided online. Since students work independently, a guided design approach was an absolute requirement during development. For example, these DE courses were designed, constructed, and offered around a blue print where everything connects to everything else. This means that course components are obviously interrelated, and offer diversity of options that meet the individual learning styles of each student enrolled in the class.

How DE Online Courses Overcome Obstacles in Traditional Classroom Instruction

Historical and insurmountable obstacles using traditional classroom instruction are not issues when using DE online instructional methods. Examples of these obstacles include: (1) classroom access, (2) students' job obligations, (3) students' geographic locations, (4) military service, (5) natural disasters, (6) illness, (7) students' learning disabilities, and (8) utilizing students' extensive computer capabilities.

1. Classroom access: There are more students at Texas A&M than there are classrooms to accommodate traditional teaching methods. This a not an issue with online courses since the majority of instruction takes place where the student lives.
2. Job obligations: The majority of TAMU students have part or full-time jobs, or are home bound parents. Online instructional opportunities offer real time and money savings for students because the commute to school, parking, and loss of salary are not requirements for course participation.
3. Geographic location: Each semester students become geographically immobile because of study abroad, field work, job location, or have permanent residences in other states or

countries. Online courses nullify the distance barrier for participation allowing students residing in any state or country to take advantage of the DE courses offered at TAMU.

4. Military service: This is probably one of the single most important student clientele groups to whom Texas A&M can offer educational opportunities. Offering traditional classroom instruction only precludes their participation. Given the option of DE online instruction, military personnel including: combat troops, pilots on air craft carriers, those stationed at military bases here and abroad, and those recently discharged have been able to continue their education.
5. Natural disasters: Hurricane Katrina shut down operations at A&M Galveston for an entire semester. There was no interruption in service for Galveston students enrolled in DE online courses at TAMU in College Station.
6. Illness: On occasion students become ill and cannot maintain a normal schedule of course involvement. Online instruction allows uninterrupted access to all course components which guarantees that they can catch up at their own pace. The instructor may also become ill which can preclude traditional classroom involvement. Online courses allow the instructor to continue to facilitate many aspects of the teaching process.
7. Learning disabilities: Students who have Attention Deficit and Hyperactivity Disorder (ADHD) require more time listening to course lectures and taking exams. Since lectures are available 24/7 there are no restrictions, as is the case in a traditional class, on student access. Additionally, if ADHD students require more time to complete the online exams, DE technology allows the instructor to reset the examination time to fit specific requirements. On one occasion a hearing impaired student accessed the lecture material by reading the scripts that accompanied a power point slide show of the course lecture. She successfully completed the course.
8. Computer capabilities: DE has provided a contemporary and relevant linkages with the extensive computer capabilities of the 21st century students now attending TAMU . These linkages are ignored in traditional classroom settings particularly in courses with large enrollments.

<u>Email messages from students to the course instructor</u>.

A soldier stationed in Afghanistan: "Hey Doc, I missed the last exam because we were under a mortar attack. Can you reschedule it for me?" No problem, it was easily done.

A Working Mother: "I love the way the course is laid out allowing me to work on each section as my schedule permits. For example, I always wait to watch the course lectures when it is time to nurse my baby."

An oil field worker: " I will be working on an off shore oil rig this semester. The company does not have streaming video capabilities so I cannot watch the lectures. What can I do?" This student was sent cd rom discs for each taped lecture provided by KAMU Broadcasting Station.

State Park Ranger: "Dr. Adams, we do have pheasants in central park in New York City so they can also be categorized as urban wildlife." Comment on a lecture topic.

The Community

Since 2001, KAMU TV Service has been a primary partner in the development of WFSC 420/630 Ecology and Society lectures. The station provided equipment and personnel to stage, film, store, and broadcast 21 lectures. The station has provided this service four different times with each new edition of the textbook. KAMU used the course as one of its public education programs aired throughout their broadcast network. This has made the course content available to community residents not connected to the formal TAMU educational system. Unsolicited public comments to Dr. Adams meeting people on the street and calls into KAMU revealed that private citizens do watch the show and appreciate it. For example, a typical encounter for Dr. Adams and a resident will start with, "Are you the one who has that science show on KAMU television?" After affirming my identity a variety of comments follow. "I really like the show because it made me aware of things I need to pay more attention to." "More people need to be made aware of what you are saying." "My 13-year old son watches the show after he gets home from school." This comment represents the interest that some young people may have in the sciences.

The Future of Distance Education (DE) at Texas A&M University

My involvement in DE over the past 15 years has been one of the most rewarding, challenging, and satisfying experiences in my teaching career. The above discussion provided examples of specific benefits that DE offered to my students. However, I have encountered some barriers preventing a broader acceptance and implementation of DE on the TAMU campuses. For example, there is a need to:

1. promote more faculty and administrative knowledge about and acceptance of DE as a viable alternative to the traditional method of classroom instruction.
2. recognize the development of DE classes as a real benefit in the tenure and promotion process.
3. train and assist faculty in the development and delivery of DE programs.
4. identify the administrative infrastructure responsible for marketing existing DE courses, setting standards for DE course development, and establishing policies and procedures for delivery of DE graduate programs, i.e., the chain of command.
5. establish department and college level support groups, consisting of DE faculty and administrators, for mutual planning and dialogue about the present and future directions for DE education at TAMU.
6. reconstruct the PICA course evaluation questions to effectively evaluate a DE course.

In conclusion, it is my hope that this review has provided additional information and guidance supporting the continued development and implementation of DE programs at TAMU.

Source: Adams, C. E. Personal communication. 20 August 26, 2012. College Station, TX

APPENDIX B. Aggregate characteristics of stakeholders in this case study

Variable	Category1	Category2	Category3	Category4
Position	Non-Tenure: 13	Assist. Prof: 4	Assoc. Prof: 12	Prof: 21
Department	COALS ALEC: 7 ENTO: 1 ESSM: 10 POSC: 1 WFSC: 19 INR: 3	Other TAMU OCNG: 3 STAT: 2	TAMUG MARB: 2 MARS: 2	
Admin DE	Yes: 15	No: 6	Unknown: 29	
Develop DE	Yes: 14	No: 3	Maybe:2	Unknown: 31
Instruct DE	Yes: 16	No: 2	Maybe:4	Unknown: 28
Chair DE	Yes: 16	No: 4	Maybe:1	Unknown: 29
DE Comt. Member	Yes: 12	No: 3	Maybe:2	Unknown: 33
2011a students	0: 1	<5: 2	5 - 10: 3	>10: 0
2011c students	0: 1	<5: 3	5 - 10: 2	>10: 0

TEXAS A&M UNIVERSITY

September 1, 2011

TO: Dr. Karan Watson
Provost & Executive Vice President for Academic Affairs

FROM: Joseph P Pettibon II
Associate Vice President for Academic Services

SUBJECT: **Report on Coding & Charging of Students**

At the request of the Provost, a committee convened with representatives from all colleges, campuses, and impacted supporting offices (see Appendix 1 for committee members) on June 30, 2011 and met on five separate occasions. The committee's charge and recommendations are presented below with accompanying appendices for more detail on some issues.

Committee Charge

The committee was charged with reviewing how we code and charge students and making recommendations on what changes need to happen in order to ensure we are accurately handling students and reporting them correctly. The following issues were addressed by the committee:

1. On-campus students enrolled in a distance education program and access to campus services (rec center, transportation, health center). This is a student who lives locally, but is enrolled in a distance education program.
2. On-campus students, living locally, enrolled in a distance education course (not program) and being charged accurately, particularly if they enroll in non-distance education courses at the same time.
3. On campus students enrolled in a non-distance education degree program who leave campus for a semester to do research and want to take a distance class, and may or may not enroll in other non-distance education classes.
4. For campus students, what is the difference between a web class and a distance class?
5. What is the status of Galveston students who want to take a distance class?
6. Classification of PhD students as G7 (Masters) for the first 30 hours for correct reporting to the THECB, but understating the number of PhD students reported to other groups.
7. If a G8 (Doctoral) student wants to receive a Masters degree, they are switched to a G7 (Masters) student for the semester in which the degree is issued and then switched back the next semester. This results in a loss of subvention.
8. Full-time enrollment designations for internships (conflict with federal financial aid reporting requirements) and summer study abroad considerations.
9. Timing of changing from an undergraduate to a graduate student in 3+2 programs like the PPA program.
10. Inconsistency with which charges are applied to enrolled students who are off-campus (distance education, in-absentia, study abroad, coop, and CS graduate students in Galveston).

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Recommendation for Issues 1 – 5 – Distance Education

Issues 1-5 above are related to distance education (DE) and essentially relate to how we charge students who are enrolled in a distance education course. The committee recommends the following (additional detail is in Appendix 2):

- Any student enrolled in a differential tuition (DT) eligible distance education course (700-level sections) should pay differential tuition, regardless of whether they are in a DE program or not.
- Any student enrolled in at least one on-campus course (non-700-level sections) should not be exempt from fees waived for off-campus students.
- Separate program codes should be created in Compass to distinguish a student admitted to a DE program from a student admitted to a regular program. At the time of admission, the code will be entered to reflect the appropriate program.
- Any student registering for a distance education course or admitted to a DE program must be asked to provide the location (state/zip or country from which they are taking the course to determine where the student is physically located?)
- Colleges should not decrease on-campus course options for students during a regular semester that are necessary for the student to graduate. However, DE courses may be an option for on-campus students during the summer, are off track on their degree program, or who want the convenience of a course offered through DE.

Recommendation for Issue 6 – Reporting of PhD Students

There is not an issue with reporting of PhD students to either the THECB or IPEDS. Both are reported correctly according to their rules. However, neither provide a clear picture of how many students are pursuing a doctorate since PhD students without a Masters are coded as a G7 student for the first 30 hours. Therefore, the committee recommends that Data & Research Services separates G7 students into two categories based on their program level – masters and doctoral – for all enrollment reports, and whenever doctoral student headcount is reported, G7 PhD students are combined with G8 students. This will allow a more accurate accounting of students in PhD programs.

Recommendation for Issue 7 – Coding of a PhD student graduating with a Masters

The committee recommends the primary and secondary program options in Compass be utilized to maintain the primary program level as a doctoral program, but allow the secondary to be used for the Masters program rather than changing the primary in the semester of graduation with the Masters. The issue is not technical, but the current policy that does not allow students to pursue more than one program at a time. The Office of Graduate Studies should be charged with working with the colleges to update the current policy and determine what limits would be appropriate to place on allowing two simultaneous programs. The Registrar and EIS will need to review graduation processes to determine if other programming changes are needed.

Recommendation for Issue 8 – Designating Full-time Enrollment for Study Abroad and Reporting for Financial Aid

The committee makes two separate recommendations for this issue. First, the committee recommends a request be submitted through the Student Rules process to allow the deans to have the additional discretion to designate a student studying abroad during the summer semester to be full-time at less than the required eight hours for full-time in summer. Students in study abroad programs are pursuing

academic coursework and engaging the people and culture of their location. As such, the educational experience is similar to a student engaged in an internship or co-op.

The second recommendation is to charge the Registrar with changes in the reporting to the National Student Clearinghouse to ensure internships are reported correctly for financial aid purposes, which requires a student's enrollment status to reflect actual hours consistent with regular semesters. Full-time enrollment status for undergraduate financial aid is always based on 12 hours with co-operative education as the sole exception.

Recommendation for Issue 9 – Handling Transition from Undergraduate to Graduate in 3+2 Programs

Reporting is occurring correctly, but efforts need to be made to ensure we are maximizing subvention by encouraging students to enroll in coursework consistent with their classification. Revenue is lost when graduate students take undergraduate courses and vice versa. The Office of Graduate Studies is already implementing changes this fall in 3+2 program procedures after working with the colleges (see Appendix 3). In addition, departments offering 3+2 programs should consider a corresponding 600-level course that is stacked with the undergraduate section of any required 300 or 400-level course that a student classified as a G7 in a 3+2 program would need to take.

Recommendation for Issue 10 – Consistency in Fees for Off-Campus Students

There are two student fees that are not consistently applied to off-campus students as noted in Appendix 4. The committee recommends the following changes:

- All off-campus students are charged the Student Services Fee. Off-campus students are expected to be offered student services and support according to SACS. Students who are off-campus should be able to take advantage of services supported by the Student Service Fee.
- All off-campus students should not be charged the University Center Complex Fee. The only off-campus group currently charged this fee is a College Station graduate student enrolling in only Galveston graduate courses in a given semester. The numbers are very small and consistency is easier to implement, monitor, and more desirable.

Appendix 1 – List of Committee Members

Office of the Provost	Joseph Pettibon II, Chair
College of Agriculture & Life Sciences	Alan Sams
College of Architecture	Leslie Feigenbaum
Bush School of Government & Public Service	Lisa Brown
Mays Business School	Marty Loudder
College of Education & Human Development	Becky Carr
College of Engineering	Robin Autenrieth
College of Geosciences	Sarah Bednarz
College of Liberal Arts	Pat Hurley
College of Science	Mike Speed
College of Veterinary Medicine & Biomedical Sciences	John August
TAMU – Galveston	Melanie Lesko
TAMU – Qatar	Todd Kent
Enterprise Information Systems	Larry Malota
Student Business Services	Bob Piwonka
Office of the Provost	Terry Spang
Office of the Registrar	Andy Armstrong
Office of Graduate Studies	Julie Wilson

Appendix 2 - How to Charge Distance Education Students

Defining Distance Education

Distance Education Course – a course in which more than 50% of the instruction is delivered where the instructor and the students do not share the same physical location. The THECB distinguishes a fully distance course (85% or more) from a hybrid distance course (50% up to, but not including, 85%), but both are considered distance education courses. Instruction may be synchronous or asynchronous. A distance education course may use the internet; one-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices; audio conferencing.

Distance Education Program – a program in which more than 50% of the required coursework is delivered via distance education.

Alternate Location – any course offered face-to-face at an alternate location is NOT a distance education course and is not subject to the distance education differential tuition.

Designating a Distance Education Course for Funding

Differential Tuition (DT) Eligible Distance Education Course – These are distance education courses offered primarily to off-campus students but also to on-campus students as a method of increasing their access to courses and therefore accelerating their degree progression. On-campus students enrolling in these courses will be charged the DT for the course. These are coded as 700-level sections.

"Web-enabled" Distance Education Course – These are distance education courses that colleges are electing to offer as a non-DT eligible section because they want to offer a web-enabled section of a DE course for on-campus students in a non-distance education programs. These may also be courses in which the students are on campus but the faculty instructor is located elsewhere. These courses are not eligible to be charged distance education differential tuition (DT) and students are subject to all normal tuition and fee charges. These are coded as 599/699 and 640-level sections.

Defining Distance Education Students

Distance Education Student – any student admitted to a distance education program.

Non-distance Education Student – any student admitted to a regular, non-distance education program.

How a Course is Designated for Distance Education

All distance education courses and programs are reviewed through the same process as non-distance education courses and programs with an additional review by a distance education panel that recommends a course as eligible to be taught via distance education.

How a Section of a Course is Determined to be charged Distance Education Differential Tuition

Courses taught via distance education and intended to be offered to students who are primarily in a distance education program or on-campus students while they are expected to be away from campus request the distance education designated tuition rate through the annual review process involving the

setting of course fees, field trip fees, and distance education differential tuition. Any section not set as DT eligible will be charged as a web-enabled course. The approval of this tuition charge is routed through the Dean, VP for Finance, Provost, and ultimately approved by the President.

Currently, the tuition rate is set by academic departments and there is a single rate for all DT eligible distance education courses in that department, regardless of level, program, or major.

How are students charged each semester?

Distance education differential tuition is charged based on the section of the course (700-level sections) and is charged to all students enrolled in that section of the course, regardless of whether the student is a distance education student or an on-campus student. Charges are tied to the courses, not the student or program.

Exempting select student fees is based on whether the student is exclusively enrolled in DT eligible distance education courses or not.

Distance Education Program Students enrolling exclusively in DT eligible distance education courses are charged Distance Education Differential Tuition as appropriate for the courses. They are exempted from paying select student fees (Health Center, University Center, Rec Sports, Transportation, University Writing, Co-op Education).

Distance Education Program Students enrolling in primarily DT eligible distance education courses, but also enrolling in a non-distance education course are subject to the Distance Education Differential Tuition charges for the distance education courses, but they will not be exempted from paying the select student fees.

On-Campus Students enrolling exclusively in DT eligible distance education courses will be charged Distance Education Differential Tuition as appropriate for the courses. They will also be exempted from paying select student fees for that semester.

On-Campus Students enrolling in a mixed enrollment of regular courses and DT eligible distance education courses will be charged Distance Education Differential Tuition as appropriate for the courses and they will not be exempted from paying the select student fees.

How do we ensure protection of on-campus students from being charged distance education differential tuition for regular coursework needed for their degree?

Colleges should not decrease on-campus course options (non-DT eligible courses) for students during a regular semester that are necessary for the student to complete requirements for graduation. However, colleges can offer distance education options to on-campus students to accelerate time to graduation or as a mechanism to keep students on track to graduate who need to complete additional hours in the summer to maintain progress.

On-campus students registering for a DT eligible distance education section of a course should be alerted to the differing charges they will incur and provided information that they should check the course schedule for non-DE options if they do not want to take the DE course as a result. Another suggestion would be to alert students to any other non DT eligible sections that may be available that same semester for the DE course they are attempting to register for. However, the committee recognizes this is a baseline modification to Compass and may not be cost effective.

Students enrolled at Galveston enrolling in a College Station course offered as a non-DT eligible course should not be subject to the Distance Education Differential Tuition charges since the course is not a DT eligible section. This does not preclude the offering of an exclusively distance education course/section for Galveston students, but Galveston students should also have the option of non-distance education sections if offered to College Station students.

The location of any student registering for a DE course must be obtained to ensure correct billing, monitor export controls, and comply with other state authorization rules. The location should be where the student intends to be physically located while taking the course. State/Zip, or Country if outside the US, should be sufficient.

On-campus students must be monitored to ensure they do not take more than 50% of their coursework via distance education. EIS would need to create a report that would be provided to the college of any impacted students each semester.

Distance education programs need to be coded as distinct from their corresponding non-distance education program.

Appendix 3 - Process to Change Students in 3+2 Programs from Undergraduate to Graduate

1. Programs have an internal admission process to get regular undergraduate students into 3+2 Programs. These students do not reapply to TAMU through the Apply Texas process because they are already current TAMU students. Once the admission decision has been made, the undergraduate concentration for the 3+2 Program is assigned to the student in Compass, often 1 academic year or more before the student is eligible to be moved to the graduate level. This concentration can be assigned by the academic advisor in the undergraduate portion of the 3+2 program or by the Degree Audit section of the Registrar's Office.

2. A Compass report is generated each semester after the 20th class day about the students with the 3+2 program's undergraduate concentration and the number of undergraduate hours the student has accumulated and the number of hours for which the student is currently registered. This report is placed in the security group that is only accessible to advisors in 3+2 program. Once a student has enough hours at the undergraduate level to be moved to the graduate classification, the program alerts the Office of Graduate Studies. Office of Graduate Studies staff creates the student's primary curriculum to be the graduate portion of the 3+2 program and moves the undergraduate curriculum to the secondary curricula in Compass beginning in the next semester. The student's classification is changed to G7 at the same time.

3. Once students move to the graduate portion of the 3+2 Program, they complete a graduate degree plan and meet the requirements to complete the graduate portion of the degree. The academic advisor in the 3+2 program works with the Degree Audit section of the Registrar's Office to substitute allowed classes towards the undergraduate portion of the program. The student is not able to graduate with the graduate portion of the program without successfully completing the undergraduate portion of the degree.

Appendix 4 – Applicable Tuition & Fees for Off-Campus Students

Distance Education and Other Nontraditional Course Offerings

DE **Distance Education Instruction:** This group includes technology mediated instruction, with the exception of web-based courses offered to on-campus students. Traditional off-campus face-to-face courses may be considered distance education.

IA *In Absentia*: The traditional student who is performing individual research or completing degree requirements that do not require classroom instruction.

CE **Cooperative Registration:** Students participating in the Cooperative Education Program at Texas A&M University.

GG **Texas A&M University Graduate Students–Galveston:** Texas A&M graduate students who enrolled at College Station, but who are taking courses exclusively at Galveston.

SA **Study Abroad:** Students participating in the Texas A&M University Study Abroad Program.

Required Tuition and Fees	DE	IA	CE	GG	SA
Tuition	Yes	Yes	Yes	Yes	Yes
Advising Services Fee	Yes	Yes	Yes	Yes	Yes
Bursar Services Fee	Yes	Yes	Yes	Yes	Yes
Computer Access Fee	Yes	Yes	Yes	Yes	Yes
Cooperative Education Fee	No	No	Yes	No	No
Distance Education Tuition & Fees	Yes	No	No	No	No
Energy Fee	Yes	Yes	Yes	Yes	Yes
Equipment Access Fees	Yes	Yes	Yes	Yes	Yes
Field Trip Fees	Yes	Yes	Yes	Yes	Yes
Health Center Fee	No	No	No	No	No
ID Maintenance Fee	Yes	Yes	Yes	Yes	Yes
International Education Fee	Yes	Yes	Yes	Yes	Yes
International Student Services Fees	Yes	Yes	Yes	Yes	Yes
Laboratory Fees	Yes	Yes	Yes	Yes	Yes
Library Access Fee	Yes	Yes	Yes	Yes	Yes
Property Deposit	Yes	Yes	Yes	Yes	Yes
Recreational Sports Fee	No	No	No	No	No
Software Licensing Fee	Yes	Yes	Yes	Yes	Yes
Sponsored International Student Fee	Yes	Yes	Yes	Yes	Yes
Student Services Fee	Yes	No	No	Yes	Yes
Transportation Fee	No	No	No	No	No
University Center Complex Fee	No	No	No	Yes	No
Writing Center Fee	No	No	No	N/A	No

APPENDIX D. Three-year teaching plan for WFSC graduate courses, including those with web delivery

(Revised 1-11-12 by K. Winemiller; 8-31-12 by J. Packard; bold font = DE course)

	Fall 2011	**Spr 2012**	**Sum 2012**	**Fall 2012**	**Spr 2013**	**Sum 2013**	**Fall 2013**	**Spr 2014**	**Comments**
Adams	**420/630**	**405/635, 420**		**420, 630**	**405/635, 420**		**420, 630**	**405/635, 420**	
Conway	311	302		311	302		311	302	302 team taught w/Light
Davis, D.	327			327			327		
DeWitt	670	BESC 320		304W	670		417	BESC 320	RENR 215 coordinator, Spr 2012, Spr 2013
Dronen	335	301		335	301		335	301	
Fitzgerald	655, 302	315/606, 316/602		302	315/606, 316/602		302	315/606, 316/602	302 team taught w/Voelker.
Fujiwara	425, 285	624, 481/681		425, 285	425, 481/681		425, 285	425, 481/681	**689?**
Gatlin	426/647	**423/623**		427	**423/623**		427	**423/623**	
Gelwick	410W/ **649**	**403W/ 613**		410W/**649**	**403W/ 613**		410W/**649**	**403W/613**	
Gold	G302H	G302H		G302H	G302H		G302H	G302H	
Grant	403/613	604		403/613	604		403/613	604	
Hurtado	433	633		433	304W		433	633	
Lacher	304	401, 485	300, 450, 451	304	401, 485	300, 450, 451	304	401, 485	Dominica course summer
Light	401	302, 681		401	302, 681		401	302, 681	302 team taught w/Conway
Locke	**406W/636** 407	**406W/ 636**		**406/636,** 407	**406/636,** 407		**406/63**6, 407	406/636, 407	
Lopez	**641**	407 **642, 681**		**643**	407 **642, 681**		643	407 **642, 681**	
Mateos	R205	646		R205	648		R205	646	646 cross-listed w/ENTO/GENE606; 648 cross-listed w/GENE 648
Mora	**439/639**	304		**628**	304		**439/639**	304	439 approval pending

Morrison	402	**618**		402	419/619		402	419/619	
Packard	**422/ 632, 481/ 681**	**622/622, 481/681**	**620**	**422/632, 481/681**	**622/622, 481/681**	**620**	**422/632, 481/681**	**622/622, 481/681**	622 taught on campus and DE simultaneously
M.Peterson	603	303		603	609		603	303	
T.Peterson	607	608		607	303		607	608	
Roelke	414	611		611 ***	418		414	611	*** sabbatical leave Fall 2012
Silvy	408/638	408/638		408/638	408/638		408/638	408/638	
Voelker	302	402, 681		302	402, 681		302	402, 681	302 team taught w/Fitzgerald
Winemiller	689, 681	R205		689, 681	R205		689, 681	R205	New course approval needed
All Faculty	*484W or 485* ***685***	*484W or 485* ***685***	*484W 485* ***685***	*484W or 485* ***685***	*484W or 485* ***685***	*484W or 485* ***685***	*484W or 485* ***685***	*484W or 485* ***685***	*Anticipate ~2 interns per faculty member per year (484)* *Professional paper (685)*
TBD	*(2)101-W*	*101-W*		*(2)101-W*	*101-W*		*(2)101-W, 304-W*	*101-W, 304-W*	*Assignments to be determined*
Neill				***417/617***					

APPENDIX E. Relevant web-delivered courses available to WFSC DE students across all departments

Year Planned	Semester Planned	Professor	Dept. & Course Number	Course Title	Credit Hours
2011, retired	A Spring	Neill	WFSC 604	Ecological Modeling	3
2011, 2012, 2013	A Spring	Gelwick	WFSC 613	Animal Ecology	3
2012, 2014	A Spring	Morrison	WFSC 618	Wildlife Study Design	3
2011, 2012, 2013	A Spring	Packard	WFSC 622	Behavioral Ecology of Vertebrates	3
2011, 2013	A Spring	Gatlin	WFSC 623	Aquaculture	3
2011, 2012, 2013	A Spring	Fujiwara	WFSC 624	Dynamics of Population	3
2012	C Fall	Mora	WFSC 628	Wetland Ecology & Pollution	3
2011, 2012	A Spring	Adams	WFSC 630/420	Ecology and Society	3
2011, 2012, 2013	A Spring	Adams	WFSC 635/405	Urban Wildlife & Fisheries	3
2011, 2012, 2013	A Spring	Locke	WFSC 636/406	Wildlife Habitat Management	3
2011, 2012, 2013	A Spring	Packard	WFSC 681	Seminar in Cross Cultural Communication: Communities and Conservation	1
2011, 2012, 2013	A Spring	staff	WFSC 685	Directed studies- Professional Paper	1 to 3
2011, 2012, 2013	A Spring	Lopez	WFSC 689	Field Military Land Management	1
2012, 2013	A Spring	staff	WFSC 693	Professional Paper	1 to 3
2012, 2013, 2014	B Summer	Packard	WFSC 620	Vertebrate Ethology	4
2011, 2012	B Summer	Adams	WFSC 630/420	Ecology and Society	3
2011, 2012, 2013	B Summer	Packard	WFSC 681	Seminar in Cross Cultural Communication: Communities and Conservation	1
2011, 2012, 2013	B Summer	staff	WFSC 685	Directed studies- Professional Paper	1 to 3
2011, 2012, 2013	B Summer	staff	WFSC 693	Professional Paper	1 to 3
2011, 2012, 2013	C Fall	Gelwick	WFSC 613	Animal Ecology	3
2011, retired	C Fall	Neill	WFSC 616	Physiological Ecology of Vertebrates	4
2012	C Fall	Neill, DeWitt	WFSC 617 /417	Biology of Fishes	3
2011, 2012, 2013	C Fall	Gatlin	WFSC 623	Aquaculture	3
2011	C Fall	Adams	WFSC 630/420	Ecology and Society	3
2011, 2012, 2013	C Fall	Packard	WFSC 632/422	Ethology	3
2011, 2012, 2013	C Fall	Mora	WFSC 639	Wildlife Ecotoxicology	3
2011, 2013	C Fall	Gatlin	WFSC 647/426	Nutritional Biochemistry of Fishes	3
2011, 2012, 2013	C Fall	Gelwick	WFSC 649	Principals of Fisheries Management	4
2011, 2013	C Fall	Lopez	WFSC 681	Seminar in Natural Resource Policy	1
2012, 2014	C Fall	Lopez	WFSC 681	Seminar in Cultural Competency and Conflict Resolution	1

2011, 2012, 2013	C Fall	Packard	WFSC 681	Seminar in Cross Cultural Communication: Communities and Conservation	1
2011, 2012, 2013	C Fall	staff	WFSC 685	Directed studies- Professional Paper	1 to 3
2012	C Fall	Fujiwara	WFSC 689	Marine Fisheries	3
2011, 2012, 2013	C Fall	staff	WFSC 693	Professional Paper	1 to 3
2012, 2013	C Fall	Lopez	WFSC 636/406	Wildlife Habitat Management	
2012, 2013	C Fall	Lopez	WFSC 643	Geospatial Technology in Military Lands Management	3
2012, 2013	A Spring	Lopez	WFSC 689	Sustainable Military Land Management	3

OTHER TAMU DEPARTMENTS

Year Planned	available	Professor	Dept. & Course Number	Course Title	Credit Hours
2012	A Spring	Moore	ALEC 606	Foundations of Leadership Theory	3
2012	A Spring	Murphrey	ALEC 612	Instructional Design Online	3
2012	A Spring	Murphrey	ALEC 613	Techniques of elearning Development and Delivery	3
2012	A Spring	Elbert	ALEC 625	Program Evaluation & Org. Accountability	3
2012	A Spring	Murphrey	ALEC 640	Methods of Technological Change	3
2012	A Spring	Strong	ALEC 695	Frontiers in Research	3
2012	A Spring	Lindner	ALEC 696	Qualitative Research in AGED	3
2012	A Spring	Lindner	ALEC620	Instrumentation & survey Research methods (CS)	3
2012	A Spring	Metz	ENTO 320	Honey Bee Biology	3
2011, 2012	A Spring	Hamilton	ESSM 610	Rangeland Resource Management	3
2011	A Spring	Tjoelker	ESSM 624	Terrestrial Ecosystems & Global Change (600)	3
2012	A Spring	Loh	ESSM 651	Geographic Information Systems	3
2012	A Spring	Wu	ESSM 660	Landscape Analysis and Modeling	3
2012	A Spring	Loh	ESSM 675	International Sustainable Community Development	3
2012	A Spring	Loh	ESSM 676	Leadership Development & Manage. Of Environmental NGO's	3
2012	A Spring	Guertner	INTA 605	American Foreign Policy	3
2012	A Spring	Armitage	MARB 689	Ecosystem Functions in the Marine Environment	3
2012	A Spring	von Zharen	MARS 675	Environmental Strategies for Scientists	3
2012	A Spring	von Zharen	MARS 648	Invasive Species; Vectors, Impacts, Theories, and	3

				Management	
2012	A Spring	Smith	STAT 641	Methods of Statistics I	3
2012	A Spring	Longnecker	STAT 651	Methods of Statistics II	3
2012	A Spring	Speed	STAT 608	Regression Analysis	3
2012	A Spring	Akleman	STAT 651	Statistics in Research I	3
2012	A Spring	Akleman	STAT 652	Statistics in Research II	3
2011, 2012	A Spring	Akleman	STAT 653	Statistics in Research III	3
2012	A Spring	Speed	STAT 656	Applied Analytics	3
2012	A Spring	Kincheloe	STAT 657	Advanced Programming SAS	3
2012	A Spring	Wehrly	STAT 659	Applied Categorical Data Analysis	3
2010	B Summer	Whisenant	ESSM 630	RESTORATION ECOLOGY	3
2010, 2011	B Summer	Knight	ESSM 636	Range and Forest Watershed Management	3
2010	B Summer	Loh	ESSM 651	Geographic Information Systems	3
2011	B Summer	Faber	INTA 654	Military Strategy	3
2011	B Summer	Lesko	MARS 602	Environmental Economics and Oceanography	3
2011	B Summer	Lombard, Speed	STAT 651	Statistics in Research I	3
2011	B Summer	Akleman	STAT 652	Statistics in Research II	3
2011	B Summer	Wehrly, Longnecker	STAT 659	Applied Categorical Data Analysis	3
2011	B Summer	Perrett	STAT 667	Statistics for AP Teachers	3
2011	C Fall	Dooley	ALEC 611	Advanced Methods in Technological Change	3
2011	C Fall	Metz	ENTO 320	Honey Bee Biology	3
2011	C Fall	Wilcox	ESSM 635	Ecohydrology	3
2011	C Fall	Loh	ESSM 651	Geographic Information Systems	3
retired	C Fall	Burton	ESSM 670	Ecosystems and Markets	3
2011	C Fall	Loh	ESSM 675	International Sustainable Community Development	3
2011	C Fall	Loh	ESSM 676	Leadership Development & Manage. Of Environmental NGO's	3
2011	C Fall	Blackwell	INTA 654	Military Strategy	3
2011	C Fall	Croft	INTA 602	Homeland Security and Homeland Defense	3
2011	C Fall	LaSala	INTA 603	American Diplomacy	3
2011	C Fall	LaSala	INTA 605	American Foreign Policy	3
2011	C Fall	Quigg	MARB 689	Marine Evolutionary Biology	3
2011	C Fall	Armitage	MARB 689	Coastal Plant Ecology	3
2011	C Fall	von Zharen	MARS 640	Environmental Administration and Law	3
2011	C Fall	von Zharen	MARS 645	Wildlife Law and Ethics	3
2011	C Fall	Anis	OCNG 608	Physical Oceanography (CS & GV)	3

2011	C Fall	Yvon-Lewis	OCNG 640	Chemical Oceanography (CS & GV)	3
	not scheduled	Santchi, Peter; Jackson	OCNG 646	Dynamics of Colloids in the Environment (CS & GV)	3
2011	C Fall	Santchi, Peter; Kessler, John	OCNG 644	Isotope Geochemistry (CS & GV)	3
2011	C Fall	Campbell, Lisa; Wormuth, John	OCNG 654	Plankton Ecology (CS)	3
2011	C Fall	Brody	PLAN 641	Environmental Planning	3
2011	C Fall	Sherman	STAT 601	Statistical Analysis	3
2011	C Fall	Wilson-Relyea	STAT604	Statistical Computations	3
2011	C Fall	Sherman	STAT 607	Sampling	3
2011	C Fall	Wehrly	STAT 630	Overview of Mathematical Statistics	3
2011	C Fall	Smith	STAT 636	Methods of Multivariate Analysis	3
2011	C Fall	Longnecker	STAT 641	Methods of Statistics I	3
2011	C Fall	Dabney	STAT 645	Applied Biostatistics and Data Analysis	3
2011	C Fall	Akleman	STAT 651	Statistics in Research I	3
2011	C Fall	Akleman	STAT 652	Statistics in Research II	3
2011	C Fall	Kincheloe	STAT 657	Advanced Programming SAS	3

OTHER INSTITUTIONS OFFERING TRANSFER CREDITS

Natural Resources Distance Education Coalition		http://www.nrdlc.org/courselist.php	

APPENDIX F. Variation in COALS DE programs that fit the "minimal structure" scenario

DEPARTMENT /DEGREE	DESCRIPTION
POSC	• Staff's (n = 1) primary responsibility is to DE students, also completes other duties for the department head (incomplete salary support through DE fees); maintains archived database (lecture videos, quizzes, exams, etc.). • Faculty do not change their teaching to accommodate DE students; staff trains students in classes to record the lecture (Camtasia); staff processes and posts the video; staff arranges for quizzes, papers and exams as specified by faculty; faculty work with staff in design of e-learning interface for course • Students' primary contact is staff, to whom they can go for admissions, placement with a faculty advisor, problem-solving; some students employed in industry do professional papers on a problem in need of a solution, as identified by the employer • Relatively small number of students (n= ?) and faculty (n=?) • No formal program assessment procedures; student and faculty satisfaction assessed informally through conversations and emails
ESSM/ MNRD (interdisciplinary degree)	• Staff (n=1) assistance is the same as for all graduate students • Faculty coordinator (n=1) communicates with recruits, places them with faculty advisors, monitors progress. • Faculty advisors are responsible for degree plans, professional paper, graduation. • Faculty who teach DE courses have been personally responsible for course development; in some cases assisted by COALS Technology Assisted Learning Lab (now closed); faculty encouraged to use ITS and Center for Teaching Excellence for development of new courses designed for DE • After acceptance, student contact is primarily with faculty advisor; students complete an internship in industry; professional paper s associated with internship; ideally, internship leads to employment • Moderate number of students (n= ?) and small number of faculty (n=?) • Formal assessment through WEAVE was bundled with all the master's degree programs.
WFSC/ MNRD (interdisciplinary degree)	• Staff (n=1) assistance is the same as for all graduate students; additional effort dedicated to DE students; corresponds with potential recruits, compiles database on applicants; distributes applicant list to faculty for placement; monitors progress; informs faculty when targeted graduation date is overdue; handles most problem solving with OGS. • Faculty coordinator position is now empty due to retirement of the previous coordinator. • Faculty coordinator for the Military Sustainability certificate program has moved to a position as new head of IRNR • Faculty developed own courses in an entrepreneurial manner so there is a relatively large diversity in the student experience (continuum of "3 e's " to 3 c's") • Relatively large number of students in DE (n= 40; NOTE not separated by degree; about 40% of graduate students in the department) and faculty (n = 18) • Formal assessment through WEAVE will be separate for each degree (MWSC, MNRD, MSC, PHD); procedures currently in progress
WFSC/ MWSC	• Same as above • Also includes students who are employed or targeted for employment in state and federal agencies; zoo industry; pre-college teaching; career changes

APPENDIX G. Potential niche markets for DE expansion: certificates and degrees

OPTION	NICHE MARKET	DESCRIPTION	ADVANTAGES	DISADVANTAGES
military lands sustainability *(contact: Dr. Lopez)*	Military (GI bill support) training for jobs as managers of DOD lands (military and civilian)	Certificate: Military Lands Sustainability • **Knowledge:** game and non-game; habitat management • **Skills:** GIS; field techniques • **network:** DOD, TWS	1) Existing program; DE courses designed for this curriculum 2) Provides knowledge and skills within 1 year 3) Targets a well-defined audience	1) May be perceived as more "training than education"
		DE Degree: MWSC (students involved in research on DOD lands); MNRD (students deployed overseas)	1) Same as above: 1), 3) 2) More in-depth education	1) Too lengthy for individuals with extensive life experience
marine stock assessment *(contact: Dr. Fujiwara)*	Employees in agencies, e.g. NOAA	Certificate: **New** • **knowledge** to understand dynamics of complex systems • **skills** to analyze large databases associated with marine fisheries • **network** scientists/practitioners	1) Provides knowledge and skills within 1 year 2) Targets a well-defined audience 3) Expand visibility and network	1) May be perceived as more "training than education" 2) Lengthy process to apply for coordinating board approval
		DE Degree: MWSC or **NEW** • Same as above • MWSC: flexible enough to encompass a specific list of courses for this area • NEW: cohort; curriculum with specified & elective courses	1) NEW degree name would be more marketable to this audience 2) Expand visibility and network	1) Too lengthy for individuals with extensive life experience 2) **NEW**: Long process tp apply for coordinating board approval
biodiversity status assessment *(contact: Dr. Lacher)*	Employees in NGO-related networks (local, national, global)	Certificate: **New** • **Knowledge;** conservation biology, taxonomy, etc. • **Skills:** mine global databases • **network:** IUCN, SCB	1) global visibility 2) expand network	1) New courses needed 2) Long process apply for coordinating board approval
		DE Degree: MWSC • **Knowledge:** taxonomy, etc. • **Skills:** statistics; databases • **network:** IUCN, SCB	1) Sufficient flexibility within existing MWSC degree	1) Too lengthy for individuals with extensive life experience
wildlife and fisheries management *(contacts: Drs. Adams & Silvy)*	Employees in urban, state and federal agencies	Certificate: **New** • **Knowledge:** specified by TWS • **Skills:** specified by TWS • **Network:** TWS	1) Transfer course credits within Natural Resource Distance Learning Consortium	1) May be perceived as more "training than education" 2) Long process coordinating board approval
		DE Degree: MNRD or **NEW** • **Knowledge**: interface between upland & aquatic systems • **Skills:** GIS, field techniques • **network:** TWS, AFS, SCB	1) Sufficient flexibility within existing MWSC degree 2) New degree would be more inclusive of aquatic areas	2) Too lengthy for individuals with extensive life experience 3) **NEW**: Long process coordinating board approval