

**CBA · NAU****College of Business  
Administration**Northern Arizona University  
Box 15066  
Flagstaff AZ 86011

# Web Course Development with Grant Support

**Working Paper Series 00-02 — May 2000****James V. Pinto**College of Business Administration  
Northern Arizona University  
Flagstaff, AZ 86011  
(520) 523-7356; Fax (520) 523-7331  
[James.Pinto@nau.edu](mailto:James.Pinto@nau.edu)**Craig VanLengen**College of Business Administration  
Northern Arizona University  
Flagstaff, AZ 86011  
(520) 523-7392; Fax (520) 523-7331  
[Craig.VanLengen@nau.edu](mailto:Craig.VanLengen@nau.edu)



College of Business  
Administration

Northern Arizona University  
Box 15066  
Flagstaff AZ 86011

# Web Course Development with Grant Support

James V. Pinto and Craig VanLengen

## INTRODUCTION

Northern Arizona University (NAU) offers limited support for the development of Web-based courses that are used in NAU's Statewide degree programs. Faculty Web course developers must apply for a Distance Education Grant from the Office of Teaching and Learning Effectiveness (OTLE). This paper documents the process of applying and developing Web courses using this support.

## GRANT ELIGIBILITY

- The requirements for a Distance Education (Web) Course Grant include the following After initial development and presentation the course will be offered at least once per academic year or on a regularly scheduled basis.
- The department will use the course to increase enrollments and provide for access for Statewide students.
- Department approval
- The faculty developer will use the course template structure provided by OTLE.

## GRANT BENEFITS

Recipients of the grant will be provided with the following:

- Copyright searches
- Web searches for online content
- Course design assistance
- 36 hours of support for graphics and multimedia development
- 14 hours of course production support (content entry)
- Quality assurance review
- 4-8 hours of instruction on creating and editing of Web documents, use of FTP, WebWizard tool, chat, testing: QuizServer, and Virtual Conference Center (VCC).
- A \$2,000 stipend. An initial payment of \$500 is made when the development begins. The final payment is made when the development is finished or the first semester the course is used.

## RECOMMENDED DEVELOPMENT GUIDELINES

The NAU Online course template structure is a hierarchical structure for the course with modules and topics and linear flow from topic to topic. The hierarchical structure allows the student to start at the course or module level and to work on topics in a top-down fashion. Once they have completed a topic they return to the module level. From the module level they can select the next topic or they can choose to return

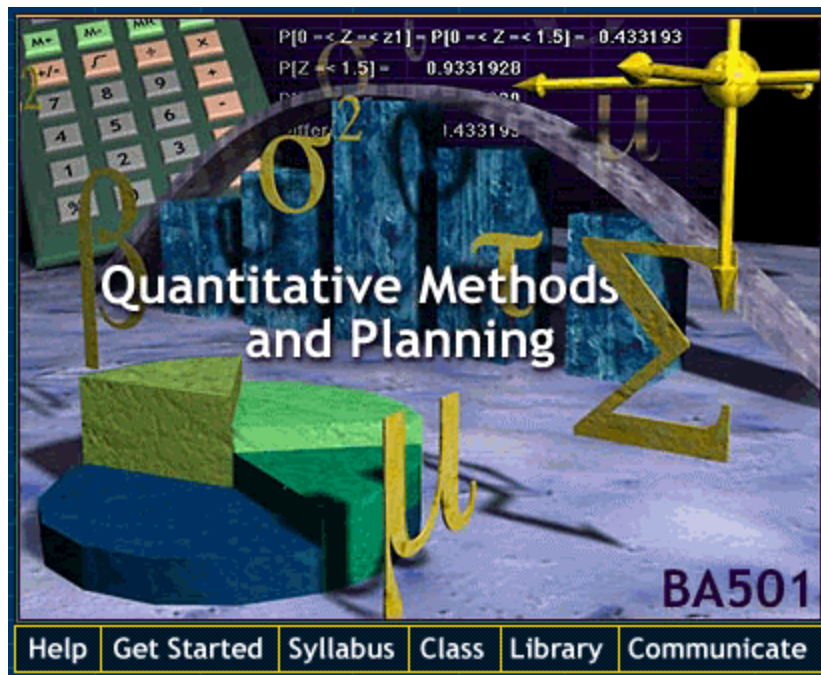
to the class level to select another module. The linear flow of the topics allows the student to progress from one topic to another without first returning to the module or course level. All courses are to follow this structure to create consistency in the Web courses delivered by NAU-Online. NAU wants the same basic structure and navigation for all online courses so that the student will not have to relearn course navigation from one online course to another.

Another recommended development guideline is to develop the course for the lowest common denominator (LCD). This requires the developer to create the course presentation for the slowest modem speed and the lowest level browser that can be reasonably expected. For example, most of the statewide students using NAU-PPP software can only connect to the Internet at 28,800 bits per second (a relatively slow speed). The slow connect speed will result in slow loading graphic images. The design solution is to use very few graphical images. Those that are used should be as small as possible. Also if students are using a pre 3.0 version of the browser software they will not be able to see the results of JavaScript programming that can be used to enhance the Web pages. A faculty developer can use JavaScript and Java Applets if students are informed that a 3.0 version of a browser must be used as a part of the course requirements.

## COURSE DEVELOPMENT

Once a faculty developer is approved for a grant OTLE will create a course profile that creates the template (skeleton pages) with a navigation bar on the top of each page and a splash page used to enter the course. This provides a consistent look for the pages and easy to use navigation links. Examples of the artwork created for an online course follow:

**Splash page:**



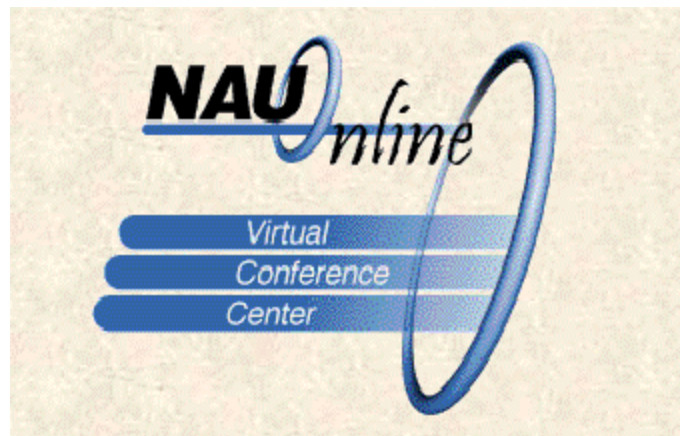
**Navigation buttons:**



OTLE also has a software package called Web Tools that can be used to create the content pages. The faculty developer is led through prompts to enter modules, topics and the contents for each page. The faculty developer's profile username and password insures that only the developer for the course will have access to the tools for his/her course. Even though the grant benefits indicate that only 14 hours are available for content entry, OTLE staff will do all the inputting of content if the faculty developer is unable to. This service is very useful for faculty developers who do not have the skill or time to use Web Tools on their own, but it greatly increases the development time for material.



If the faculty developer wants to use discussion groups or chat areas in the course they can use the Virtual Conference Center (VCC) or in the College of Business Administration (CBA) the CBA Chat Connection. In addition, NewsGroups may be used.



## **COURSE DELIVERY**

When you start delivering the course be prepared to spend more time on it than you thought. Instructions that you thought were obvious will be misinterpreted and misunderstood. The number of e-mails from the students will be very large. You can expect to spend at least as much or more time with a Web course as you would with a regular lecture-based course.

Grading support is provided for courses that have statewide (non-home campus) enrollment. The support is one sub section leader per 20 students. This individual can be used to grade the course assignments and to monitor and interact on the chat and conference centers. A key to using the grading support is to insure that your assignments are ones that you can expect a student to grade with a detailed answer key. If you normally use questions that are graded on the depth of the answer and not on specific content you will still have to grade those.

## **WEB-DISTANCE DELIVERY ISSUES**

One of the issues mentioned in the discussions on on-line courses is what is the maximum class size? Is it 20, 30, 40 or  $\infty$ ? Most of the literature written by faculty teaching Web-based courses indicates that it is about 20 students. However, the authors have seen comments made by college and university administrators that there is no class size limit on Web courses since the college or university is not constrained by seats in the classroom. College or departments need to negotiate class sizes with the faculty and set appropriate course capacities.

Another issue is the learning mode of the student. Does the student learn best by seeing, hearing, or writing about the course content? How can a Web course address multiple learning modes? Just as with lecture courses, there are some students who will not be able to grasp the course content. The drop rate for a Web course may be higher than the same course taught in the lecture mode because of student frustration with the course presentation.

A major concern of many Web course instructors is student testing and evaluation. How do you verify that the person sending in the assignments and taking the examinations is the individual registered in the course? We will be uncertain until we have Web cams mounted on the computers of the students taking the course. And even then with the current technology can we be sure it is not prerecorded? There are two exam format choices. Statewide is available to supervise the distribution of exams to proctored sites. This is the most secure method of exam delivery, but it requires a long turn around time from the initial exam preparation to actually receiving the exams back from students. The University has a special software program, QuizServer, to create on-line exams. There are many options in the program. The most secure option is to create a restricted exam with individual usernames and passwords for each student in the class. A graded copy of the exam is sent to the instructor. A log is kept each time the exam is accessed. The log includes the log on time the log off time and the exam score. The exam can be made up of multiple choice, true/false and short answer questions. There are obvious weakness to this and any other form of online testing. There is no way to assure that the person taking the exam is the person registered for the course. The students may be working in groups and/or sharing exam information. The username and password addresses the first concern to some extent. If the students are geographically separated, then the second concern is minimized.

## **CONCLUSION**

Grant funds are available for faculty to develop courses for Web presentation. Courses must be part of the statewide efforts for NAU and must receive approval from OTLE and the administrative unit that offers the course. Grant funding provides benefits to the Web developer but also requires the developer to follow OTLE guidelines to provide a consistent look-and-feel to the Web courses provided by NAU Statewide Campus.

## REFERENCES

- Boerner, Gerald. Boerner, Grace, McGill, D., Skalnik, P., & Verdugo, P. "Elements of effective Web pages." *Syllabus*. Vol. 13 No. 8 (April 2000): p. 42-46.
- Brusilovsky, P. "Web Lectures: Electronic Presentations in Web-Based Instruction." *Syllabus*. Vol. 13 No. 5 (January 2000): 18-23.
- Carlson, R. "Assessing your students: Testing in the online course." *Syllabus*. Vol. 13 No. 7. (March 2000): 16-18.
- Gaud, W. "Assessing the Impact of Web courses." *Syllabus*. Vol. 13 No. 4 (November/December 1999): 49-50.
- Gilbert, S. W. "Re: Responses on Student-Faculty Ratio in Distance/Online Courses." AAHESGIT-20: (1 Mar. 2000).
- Hsu, S., Marques, O., Hamza, M. K., and Alhalabi, B. "How to Design a Virtual Classroom: 10 Easy Steps to Follow." *T.H.E. Journal*. Vol. 27 No. 2 (September 1999): 96-113.
- Kelly, L. "Wired learning: Internet education gains steam." *The Arizona Republic*. 30 Jan. 2000: EC1.
- Rosenblum, J. "Design and development of online courses: Faculty working in collaboration." *Syllabus*. Vol. 13 No. 7. (March 2000): 10-14.
- Serwatka, J. A. "Internet Distance Learning: How Do I Put My Course on the Web?" *T.H.E. Journal*. Vol. 26 No. 1 (June 1999): 71-74.
- Wade, J. "Assessment in Distance Learning: What Do Students Know and How Do We Know that They Know It?" *T.H.E. Journal*, Vol. 27 No. 3 (June 1999): 94-101.