Course Instructor:

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Course Description:

This course is designed to introduce the basic concepts, terminology, and principles of how computers communicate over networks, including the Internet, and how networks are used to support instructional activities. The course will cover traditional types of network configurations and technologies as well as emerging technologies in the area of telecommunications, wireless, streaming media, peer-to-peer, and e-learning. This course is structured around exposure to network technologies that facilitate learning through collaboration, information sharing, and knowledge building. It will also cover those available for accessing, managing, and publishing instructional materials on-line. This is NOT a course on Network administration.

We will be learning about and using software tools that are freely available on the Web or through Open Source. This has the advantage of training you on software that you can afford to use in your work place or schools.

Course Prerequisites

- Pentium III computer and at least Windows 98
- 56k Internet connection
- Basic Windows skills

Required Reading Materials for Course:
Textbook

e-Reserves and Online Sources

Additional and supplemental course readings will be drawn from online sources as well as copied articles, chapters, and papers that will be made available through GMU Libraries eReserves.

Required readings have been selected to enhance both the understanding and application of networking technologies introduced in this course. Students are expected to share reactions through participation in online discussions and in weekly weblogs. Students may also be required to research additional articles.

Recommended Text and Resources:

There is a broad selection of beginning or introduction to networking type books available from the library and other sources. Examples: Teaching Yourself Networks in 24 Hours (SAMS), or Networking for Dummies.

Student Outcomes:

Students participating in this course will understand the basic theory, purpose, and organization of a computer
network. Students will develop skills in how networks are used to support, enhance, and the future of instructional applications and strategies.

Course Objectives:

As a result of this course, participants will be able to:

- develop a general knowledge of computer networks including network configurations, networking software and hardware components, and common standards/protocols associated with multimedia communications and Internetworking
- share network resources and perform basic Web publishing operations in a client-server configuration.
- share network resources, communicate, and perform basic Web publishing operations in a peer-to-peer configuration.
- troubleshoot basic network problems associated with publishing and managing network instruction
- identify current technologies and future trends in computer networks as known in K-12, higher education, business, government and military settings.
- gain fluency using various asynchronous and synchronous Computer-Mediated Communication tools, such as forums, instant messaging, and groupware.
- gain an awareness of how network configurations shape learning environments in particular, the instructional implications of e-Learning organized around Peer-to-Peer, Client-Server (Virtual Learning Systems), and Wireless network models.

Requirements:

Participation in the course – whether through discussions, chats, group projects – is mandatory, as these shared experiences are important parts of the course. Expect to be online approximately 1 hour each day or 7-9 hours per week. The class schedule may change as the course progresses; changes will be posted on the
course’s WebCT Homepage under Announcements.

Obtaining and regularly using a computer account with access to the Internet is required.

Each student is expected to complete all readings and class exercises and contribute to in-depth asynchronous threaded and synchronous discussions as assigned by the instructor or as part of a class team’s lesson.

Each student (as part of a small team) is expected to explore a groupware or collaborative software approved by the instructor. Installation of trial software may be required.

To enable individualization of the course to the needs of each student, special arrangements on requirements and assignments may be negotiated in writing with the instructor. Revised assignments typically involve direct, extensive involvement in some project engaged in the design or administration of a network-based educational experience.

Students missing the due date for an assignment must make immediate arrangements with the instructor to fulfill that requirement before the next class.

Class Activities:

This course will utilize a combination of reading-lectures, hands-on experiences, media, guest speakers, discussions, and individual and group projects to help participants understand the strengths and limits of current networking technologies for use in educational environments.

Class Assignments:
There will be 5 major assignment areas that are required for successful completion of this class. The following is a breakdown of the requirements and their grade percentage:

I. Case Study Analysis (25%)
This assignment involves an analysis of a case study on network file sharing in an educational setting. This assignment can be done individually or as a group. After reading the file sharing case, your task is to write up a set of solutions organized from simple to complex as follows:

- Standard Client-Server strategies -- minimum of 8 technological options
- Peer-to-Peer strategies -- minimum of 2 technological options
  - one from a Mediated system
  - one from a Decentralized system
- Wireless strategies -- minimum of 1 technological option

Each solution should be identified with a specific technology and describes how the technology can be used to share files as a solution to the case. The solution description should be a minimum of a few solid sentences to a paragraph. Each case solution should be based on the ideas and principles in the texts and required readings, and should provide an accurate and authentic solution to the problem and address as many of the following areas as applicable:

- Name and short description of how the network-based technology functions as a solution to the situation
- Workarounds required, reality checks, caveats, special support issues
- Security features
- Consideration of associated issues, for example, accessibility for students with disabilities

For specific grading information, go into WebCT and view the information at the Evaluations Link

II. Teaching with Technology Guide (15%)

This assignment involves the completion of 2-4 page review or technical guide on a network-based instructional technology. The review should include the following:

1. Overview of the technology
2. Reality Check - some issues to consider before deciding to use this technology

3. Pedagogical issues and Best Practices
4. Technical issues
5. Support services needed
6. References and examples

III. Weblog Journal Reflections (25%)

Weblogs will be used to collect your reflections and experiences as you engage the course content and for articulating your understanding of the readings and exercises. This assignment involves the completion of a weekly reflective journal on course readings and activities each week.

Every week, you will be expected to post an entry to your blog reflecting on your class learning (thoughts, reading, researching and investigating, class discussions, and activities and working on assignments).

When discussing your learning, be sure to give specific examples.

Each week you will be provided with instructions for customizing your weblogs to add new features that will extend the capabilities of your blog and permit you to have more knowledge management functions.

You will be asked to link your blog to other class members' blogs. Be sure to make a point of linking to possible relevant entries they have made and discuss how those entries have informed/enriched your own understanding of the learning materials.

In addition, your Weblogs will serve as a kind of ePortfolio for the class. During the course, you will be asked to link to relevant resources and to your fellow student blogs. By the end of the course, you should have substantial repository of information on the topics.

You should use the Reflective Questions at the end of each module to check your comprehension of what you have learned and focus your reflections on these questions.

For specific grading information, go into WebCT and view the information at the Evaluations Link
NOTE: The exercises that require you to make small customizations to your weblog client will be evaluated under the Section V: Exercises

IV. Discussions Participation (15%)

There will be 3 discussions throughout the course - topics to be decided later. Discussions will take place from Thursday through midnight Wednesday of the following week. Students are expected to participate fully. Participation via electronic discussions is assessed by both quality and quantity of interactions. For specific grading information, go into WebCT and view the information at the Evaluations Link

V. Lab/Exercise Completion (20%)

Students will receive 20 participation points by completing the practice exams, small individual and group exercises, and other learning activities required for completion throughout the course.

Assessments:

This course is graded on an A, A-, B+, B, B-, C and F basis. Grades will be based on completion of course requirements and on the scope, quality and creativity of the assignments as specified in the assignment rubrics. Incompletes in the course will be given only under unusually extenuating circumstances.

Required Assignments and Values:

I. Case Study Analysis (25%)
II. Teaching with Technology Guide (15%)
III. Weekly Weblog journal reflections (25%)
IV. Individual Participation in (3) Discussions (15%)
V. Lab exercises and practice exams (20%)
Grading Scale:

A     93 - 100
A-    90 - 92
B+    88 - 89
B     83 - 87
B-    80 - 82
C     70 - 79
F     Below 70