

MEDT 7485**DATA NETWORKS FOR INSTRUCTION**

Semester Hours: 3

Semester/Year:

Instructor:

Office Location:

Office Hours:

Telephone:

Email:

Fax:

Distance Support: WebCT Home Page –
<http://webct.westga.edu/>
WebCT Vista Support –
<http://help.view.usg.edu>
Distance Learning Library Services -
<http://www.westga.edu/~library/depts/offcampus/>
Ingram Sullivan Ingram Library –
<http://www.westga.edu/~library/info/library.shtml>

COURSE DESCRIPTION:

Prerequisite: MEDT 6401 or instructor's permission.

The design and development of data networks for instructional settings will be covered. In addition to current trends and issues, students will also explore how to use data networks for a variety of instructional contexts and how to perform basic network trouble shooting and repair.

CONCEPTUAL FRAMEWORK

The conceptual framework of the College of Education at UWG forms the basis on which programs, courses, experiences, and outcomes are created. By incorporating the theme "Developing Educators for School Improvement", the College assumes responsibility for preparing educators who can positively influence school improvement through altering classrooms, schools, and school systems (transformational systemic change). Ten descriptors (decision makers, leaders, lifelong learners, adaptive, collaborative, culturally

sensitive, empathetic, knowledgeable, proactive and reflective) are integral components of the conceptual framework and provide the basis for developing educators who are prepared to improve schools through strategic change. National principles (INTASC), propositions (NBPTS), and standards (Learned Societies) also are incorporated as criteria against which candidates are measured.

The mission of the College of Education is to develop educators who are prepared to function effectively in diverse educational settings with competencies that are instrumental to planning, implementing, assessing, and re-evaluating existing or proposed practices. This course's objectives are related directly to the conceptual framework and appropriate descriptors, principles or propositions, and Learned Society standards are identified for each objective. Class activities and assessments that align with course objectives, course content, and conceptual framework are identified in a separate section of the course syllabus.

COURSE OBJECTIVES

Students will:

1. demonstrate knowledge, skills, and understanding of concepts related to computing networks as they apply to instruction (Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Tomsho, 2007). (Lifelong Learners, Adaptive, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-I.A.)
2. demonstrate the ability to troubleshoot and perform basic repairs on computer networks (Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Tomsho, 2007). (Lifelong Learners, Adaptive, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-I.A.)
3. demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging networking technologies (Cisco Learning Institute, Boswell, Calvert, & Campbell, 2003; Davidson-Shivers & Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-I.B.)
4. design networking systems that meet the diverse needs of learners (Bray, Brown, & Green 2004; Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Tomsho, 2007). (Decision Makers, Leaders, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.A)
5. apply current research on teaching and learning with technology when planning instructional systems as they relate to computer networks (Davidson-Shivers & Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Mather,

1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Decision Makers, Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.B.)

6. identify and locate technology based resources and evaluate them for accuracy and suitability in the context of a computer network (Davidson-Shivers & Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Decision Makers, Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.C.)

7. plan for the management of networked instructional resources within the context of learning activities (Davidson-Shivers & Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Decision Makers, Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.D.)

8. plan strategies to manage student learning in a networked learning environment (Davidson-Shivers & Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Leask & Pachler, 1999; Mather, 1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Decision Makers, Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.E.)

9. identify and apply instructional design principles associated with the development of instructional computer networks (Davidson-Shivers, Rasmussen, 2006; Education Development Center, Inc., 2002; Hobson, 1998; Mather, 1997; Stefl-Mabry & Lynch, 2006; Tomsho, 2007). (Decision Makers, Leaders, Lifelong Learners, Adaptive, Collaborative, Culturally Sensitive, Empathetic, Knowledgeable, Proactive, and Reflective; NBPTS Propositions 1, 2, 3, 4, 5; ISTE/NETS-T F-II.F.)

TEXTS, READINGS, AND INSTRUCTIONAL RESOURCES

Required Text:

Education Development Center, Inc. (2002). *The school network handbook*. Eugene, OR: International Society for Technology in Education.

References:

- Bray, M., Brown, A., Green T. (2004). *Technology and the diverse learner: A guide to classroom practice*. Thousand Oaks, CA: Corwin Press, Inc.
- Cisco Learning Institute, Boswell, S., Calvert, B., Campbell, P (2003). *Security+ guide to network security fundamentals*. Boston, MA: Course Technology.
- Davidson-Shivers, G. V., Rasmussen, K.L. (2006). *Web-based learning: design, implementation, and evaluation*. Upper Saddle River, NJ: Pearson Merrill/Prentice Hall.

- Education Development Center, Inc. (2002). *The school network handbook*. Eugene, OR: International Society for Technology in Education.
- Hobson, E. H. (Ed.). (1998). *Wiring the writing center*. Logan, UT: Utah State University Press.
- Leask, M., & Pachler, N. (Eds.). (1999). *Learning to teach using ICT in the secondary school*. New York, NY: Routledge.
- Mather, B. R. (1997). *Creating a local area network in the school library media center*. Westport, CN: Greenwood Press.
- Steffl-Mabry, J., Lynch, B. L. (2006). *Knowledge communities: bringing the village into the classroom*. Lanham, MD: Scarecrow Press.
- Tomsho, G. (2007). *Guide to networking essentials*. Boston, MA: Course Technology.
- Wang, H., Gearhart, D. L. (2006). *Designing and developing web-based instruction*. Upper Saddle River, NJ: Pearson Merrill/Prentice Hall.

ACTIVITIES AND ASSIGNMENTS, EVALUATION PROCEDURES, AND GRADING POLICY

Link to Conceptual Framework

The focus of this course is on designing and putting together an instructional data network based upon widely accepted network design principles. Students will learn concepts and skills associated with educational networks, network security, and network trouble shooting. These concepts will be taught using a series of projects in which the student will have to perform basic networking configuration and troubleshooting on a simulated educational network. As students complete the course, they will have demonstrated achievement in the areas of *decision making*: selecting appropriate technologies for an instructional data network (**weekly work 2.1- 2.2, student work 3.1- 3.9**); *lifelong learning*: studying how to use and integrate networking technologies into the work place (**weekly work 2.1- 2.2, student work 3.1- 3.9; final exam 4.0**); *collaboration*: working with colleagues to plan and develop an instructional data network (**weekly work 2.1**); *cultural sensitivity*: adapting interventions and technology innovations to meet the needs of diverse learners (**weekly work 2.1**); *knowledge*: drawing on pedagogical, content, and professional knowledge while designing and developing an instructional data network (**in class activities 1.0; weekly work 2.1- 2.2, student work 3.1- 3.9; final exam 4.0**); and *reflection*: engaging in ongoing, continuous reflection related to technology to determine the effectiveness of interventions/ innovations to create an effective instructional network (**weekly work 2.1- 2.2, student work 3.1- 3.9**).

Activities and Assessments:

1.0 Class Participation (6 points)

Students will participate in all class activities, be prepared for each class by doing the assigned readings in advance, and have the appropriate materials required for class activities.

(Course Objectives 1, 2, 3, 4, 5, 6, 7, 8, 9; disposition; teacher observation)

2.0 Weekly Work

2.1 Weekly Discussions (15 weeks @ 6 points each = 90 points)

Each week the student will respond to a discussion prompt provided by the instructor. With a few exceptions, the student is expected to make an initial posting on or before Wednesday of that week and follow up with a second posting **on a different day** of the week. In addition to the two postings students will be assessed on the quality of their postings.

(Course Objectives 1, 2, 3, 4, 5, 6, 7, 8, 9; Knowledge, Skills, Disposition; Teacher Observation, WebCT postings, online discussions)

2.2 Weekly Quizzes (9 quizzes @ 5 points each = 45 points)

Each week a short quiz of no more than five questions will be made available through WebCT on that week's readings. Please consult the tentative course schedule for each week's readings.

(Course Objectives 1, 2, 3, 4, 5, 6, 7, 8, 9; Knowledge, Skills; WebCT Quizzes)

3.0 Student Work

All student work submitted during the course is required to be original. All projects must be completed to be graded.

3.1 Basic Homepage Exercise (4 Points)

Using the directions provided through Vista and in class students will create a basic webpage that will serve as the home page for all of the instructional projects created in the class.

(Course Objectives 1, 2, 6; Knowledge, Skills, Disposition; rubric).

3.2 Basic Computer Troubleshooting Exercise (4 Points)

Using the directions provided in class, students will solve one or more basic computer problems.

(Course Objectives 1, 2, 6; Knowledge, Skills, Disposition; rubric).

3.3 File and Print Sharing Exercise (4 Points)

Using the directions provided, students will configure a file server for file and print sharing.

(Course Objectives 1, 2; Knowledge, Skills; rubric).

3.4 Network Backup Exercise (4 Points)

Using the directions provided, students will perform a basic network backup and restore.

(Course Objectives 1, 2, 3, 6; Knowledge, Skills; rubric).

3.5 Basic TCP/IP Configuration Exercise (4 Points)

Using the directions provided, students will configure a network with static IP address, dynamic IP addresses, and a domain name.

(Course Objectives 1, 2, 3, 6; Knowledge, Skills; rubric).

3.6 Basic Firewall Configuration Exercise (4 Points)

Using the directions provided, students will configure a firewall for basic port redirection and network traffic blocking.

(Course Objectives 1, 2, 3, 6; Knowledge, Skills; rubric).

3.7 Accessibility and Security Audit Exercise (4 Points)

Using the directions provided, students will perform a basic accessibility and security audit of an educational network.

(Course Objectives 1, 2, 3, 6, 7; Knowledge, Skills; rubric).

3.8 Network Creation Exercise (4 Points)

Using the directions provided in class, students will create a basic educational network including hardware and software installation.

(Course Objectives 1, 2, 3, 5, 6; Knowledge, Skills; rubric).

3.9 Computer Network Plan (15 Points)

The student will complete an instructional data network plan that incorporates the principles of effective instructional network design covered in class. The plan should include an explanation of the context of the network, network diagram, inventory, and acceptable use policy (AUP).

(Course Objectives 1, 2, 3, 4, 5, 6, 7, 8, 9; Knowledge, Skills; rubric).

4.0 Final Exam (15 points)

A final exam, delivered through WebCT will be given during the week listed on the tentative course schedule. The exam will be comprehensive and will consist of questions drawn from the course readings and activities.

(Course Objectives 1, 2, 3, 4, 5, 6, 7, 8, 9; Knowledge, Skills, Disposition; exam).

Evaluation Procedures

Students are evaluated in the following areas:

Activity	Total Points	Type of Assessment	Due Dates/Location
1 Class Participation	6	Teacher Observation	On-going
2.1 Weekly Discussions	75	Rubric	On-going
2.2 Weekly Quizzes	30	WebCT Quiz	On-going
3.1 Basic Webpage Creation	4	Rubric	January 21
3.2 Basic Computer Troubleshooting Exercise	4	Rubric	January 28
3.3 File and Print Sharing Exercise	4	Rubric	March 11
3.4 Network Backup Exercise	4	Rubric	March 18
3.5 Basic TCP/IP Configuration Exercise	4	Rubric	April 1
3.6 Basic Firewall Configuration Exercise	4	Rubric	April 8
3.7 Accessibility and Security Audit Exercise	4	Rubric	April 15
3.8 Network Creation Exercise	4	Rubric	April 29
3.9 Computer Network Plan	12	Rubric	April 22
4.0 Final Exam	20	WebCT Exam	May 2 at 8:00 PM
Total Points	175		

GRADING SCALE:

A = 175 to 166 Points

B = 165 to 149 Points

C = 147 to 131 Points

Below 130 Points = F

CLASS POLICIES

1. Submitting Assignments.

Students are expected to submit assignments on time. All components must be completed to receive a grade. Valid reasons for submitting work late must be cleared by the professor in advance. It is the student's responsibility to contact the professor when extenuating circumstances take place. Class participation points will be deducted for each day an assignment is late. Late online assignments such as bulletin board postings will result

in grade reduction. All assignments are due by midnight on the date due. Any assignments posted after midnight are considered late.

Students can expect instructor feedback to emails within 48 hours, minor assignments such as discussion postings within three days of the due date, and one week of a major assignment.

2. Professionalism

Students are expected to conduct themselves professionally. This is an essential quality for all professionals who will be working in the schools. All students are expected to display a positive attitude. Professionalism includes but is not limited to the following:

- Participating in interactions and class activities in a face-to-face or online environment in a positive manner.
- Collaborating and working equitably with students in the class.
- Actively participating in class each week.
- Turning in assignments on time.
- Arriving at and leaving class punctually.
- Treating class members, professor, and colleagues with respect in and out of the classroom.
- Eliminating interruptions in class. (This includes cell phones, beepers, disruptive behavior at class meetings).

Students who display a lack of professionalism will be contacted by the instructor immediately after class when violations take place and informed of the consequences. If there is a second violation the student will meet with a departmental committee and may be dismissed from the program for at least one year.

3. Communication Policy

The official communication method for this class will be through WebCT Vista and campus e-mail (MyUWG). You will be responsible for checking your Vista and MyUWG email, since the University and I will be using those addresses to correspond with you. You should also look under “My Courses” on your MyUWG for relevant files, announcements and so on.

4. Extra Credit and Previous Work Policy

Extra credit work may be offered in this course. This determination will be made by the instructor; work completed for another class will not be accepted for fulfilling the requirements of this course.

5. Disabilities Pledge

I pledge to do my best to work with the University to provide all students with equal access to my classes and materials, regardless of special needs, temporary or permanent disability, special needs related to pregnancy, etc.

If you have any special learning needs, particularly (but not limited to) needs defined under the Americans with Disabilities Act, and require specific accommodations, please do not

hesitate to make these known to me, either yourself or through the Coordinator of Disability Services, Dr. Ann Richards.

Students with documented special needs may expect accommodation in relation to classroom accessibility, modification of testing, special test administration, etc. This is not only my personal commitment: it is your right, and it is the law!

ACADEMIC HONESTY

Students are expected to adhere to the highest standards of academic honesty. Plagiarism occurs when a student uses or purchases ghostwritten papers. It also occurs when a student utilizes ideas or information obtained from another person without giving credit to that person. If plagiarism or another act of academic dishonesty occurs, it will be dealt with in accordance with the academic misconduct policy as stated in the latest University of West Georgia Undergraduate Catalog and Graduate Catalog

Disciplinary procedures described in the latest University of West Georgia Undergraduate Catalog and Graduate Catalog will be followed when violations take place. Infractions may include cheating, plagiarism, disruptive behavior, and disorderly conduct.

CLASS OUTLINE

This class is delivered using face-to-face instruction and WebCT at <http://www.mywebct.westga.edu>. All written assignments should be submitted using Microsoft Office Word. There will be three face-to-face meetings in which students are expected to be participants as well as discussion forums. Students are expected to use WebCT for corresponding with each other and the Instructor.

Assignments: All evaluation checklists are listed in WebCT under the course content link. Work will be submitted using the assignments feature, discussion board, or testing feature of WebCT.

Tentative Class Schedule

****SNH Refers to the School Network Handbook**

Week	Activities/Readings	Assignment Due
Week 1 <i>January 8-14</i> Online	Online Introductions	Week One Discussion
Week 2 <i>January 16-21</i> Online	Destinations on the Information Highway Reading: **SNH Chapter One	Week Two Discussion Quiz: SNH Chapter One Basic Webpage Creation
Week 3	Highways and Rules of the Road	Week Three Discussion

January 22-28 Face to Face 1/22 5:30-8:00 ED-205 and Online	Reading: SNH Chapter Two	Quiz: SNH Chapter Two Basic Computer Troubleshooting (In Class)
Week 4 January 29 - February 4 Face to Face 1/29 5:30-8:00 ED-205 and Online	Traffic Regulators: Routers, Switches, and Hubs Oh My! Reading: SNH Chapter Three	Week Four Discussion Quiz: SNH Chapter Three
Week 5 February 5-11 Online	Operating Systems and Applications Reading: SNH Chapter Four	Week Five Discussion Quiz: SNH Chapter Four
Week 6 February 12-18 Online	Technologies for Long-Distance Networks Reading: SNH Chapter Five	Week Six Discussion Quiz: SNH Chapter Five
Week 7 February 19-25 Online	Technologies Unique to Educational Networks Reading: SNH Appendix A	Week Seven Discussion Quiz: SNH Appendix A Formative Evaluations
Week 8 February 26 - March 4 Online	Technologies Unique to Educational Networks Continued Reading: SNH Appendix B	Week Eight Discussion Quiz: SNH Appendix B
Week 9 March 5-11 Online	File and Print Sharing Reading: SNH Appendix C	Week Nine Discussion Quiz: SNH Appendix C File and Print Sharing Exercise
Week 10 March 12-18 Online	Troubleshooting Using User Feedback Reading: SNH Appendix D	Week Ten Discussion Quiz: SNH Appendix D Network Backup Exercise
Spring Break No Class		
Week 11 March 26- April 1 Online	TCP/IP Configuration	Week Eleven Discussion Basic TCP/IP Configuration Exercise

Week 12 <i>April 2-8</i> Online	Firewall Configuration	Week Twelve Discussion Basic Firewall Configuration Exercise
Week 13 <i>April 9-15</i> Online	Network Accessibility and Security	Week Thirteen Discussion Accessibility and Security Audit
Week 14 <i>April 16-22</i> Online	Computer Network Planning	Week Fourteen Discussion Computer Network Plan Due April 22nd
Week 15 <i>April 23-29</i> Meet Face to Face April 25 5:30-8:00 ED-205 Online	Network Creation: Putting Theory into Practice Exam Review	Week Fifteen Discussion Network Creation Exercise (In Class)
Final Exam Week <i>April 30-May5</i> Online	Final Exam	Final Exam: Due 8:00 PM May 2nd