



• INT 4013 - Telecommunications & Networks (Online) – CRN 1155 – Fall 2007

<b>COURSE TITLE BLACKBOARD SITE</b>	INT 4013 – Telecommunications & Networks Fall 2007 – <a href="http://my.ltu.edu">http://my.ltu.edu</a> and select CRN 1155
<b>INSTRUCTOR</b>	David Bingham Adjunct Professor, College of Management Contact Information: E-mail: <a href="mailto:dgbingham@att.com">dgbingham@att.com</a> Telephone: 248-333-0051 or cell at 248-730-8585 Office hours by appointment
<b>SCHEDULE</b>	<b>On-line modules and exam period (College of Management schedule):</b> Start date: September 5, 2007 End date: December 15, 2007 See <a href="http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp">http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp</a> for LTU academic calendar information.
<b>LEVEL / HOURS PREREQUISITE</b>	BSIT Degree / 03 semester credit hours Prerequisites: Undergraduate level <a href="#">INT 3023</a> Minimum Grade of D-
<b>REQUIRED TEXT  (See Blackboard for additional resources)</b>	Required Text(s): The Essential Guide to Telecommunications, 4th Edition By: Annabel Dodd (ISBN 0-13-148725-6) Optional Text(s): Newton Telecommunications Dictionary Available for online purchase through LTU Bookstore at: <a href="http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489">http://lawrence-tech1.bkstore.com/bkstore/TextbookSelection.do?st=489</a>
<b>ADDENDA</b>	LTU Online student resources <a href="http://www.ltu.edu/ltuonline/currentonline.asp">http://www.ltu.edu/ltuonline/currentonline.asp</a> Course-specific information is provided in the "Course Information" area
<b>TECHNICAL SUPPORT</b>	Technical support for using Blackboard is provided by the LTU Help Desk, 248-204-2330 or <a href="mailto:vitr@ltu.edu">vitr@ltu.edu</a>

- **Educational Goals**

This course introduces students to the field of telecommunications and networking at a high level. The understanding of the core architecture of each technology is an important factor in making good decisions as a manager of a network. We will explore the various transport technologies as well as some of the applications that depend upon the in real business situations.

- **Objectives**

- Terms and Concepts - Students will be able to explain and apply the basic terms and concepts used in telecommunications including media, data transmission and protocols.
- Business Situation Analysis - Students will be able to address key business issues associated with Telecommunications through case studies on past industry/company situations.
- Industry Knowledge - Students will explore current industry trends and developments in telecommunications through in class article reviews.

- **Instructional Methods and Course Organization**

A variety of instructional methodologies are used in this course, which may include but are not limited to:

- **Blackboard learning environment** – Blackboard at [my.ltu.edu](http://my.ltu.edu) contains the syllabus, all assignments, reading materials, streaming videos, narrated PowerPoint mini-lectures, podcasts, written lecture notes, chapter quizzes, links to Web resources, and discussion forums. You will submit all assignments via Blackboard, and are expected to participate regularly in discussion topics. Please take time to familiarize yourself with the organization of the Blackboard site. You will want to check the site frequently for announcements reminding you of new resources and upcoming assignments.
- **Student/Instructor Conversations** – Students keep in touch with the instructor via e-mail messages, telephone conference calls, and discussion board postings.
- **Required readings** – Textbook chapters should be read according to the schedule outlined in the syllabus. Chapters will be discussed online.
- **Assignments** – List and briefly describe assignments here.

- **Class Policies and Expectations**

I plan to offer you a valuable learning experience, and expect us to work together to achieve this goal. Here are some general expectations regarding this course:

- Each student has a LTU e-mail account. If you wish to use a different e-mail address for this course, please **change your e-mail address in Blackboard under “Student Tools”** and send an e-mail to me so I can store your address in my e-mail directory.
- Readings, discussion forum participation, and written assignments must be completed according to the class schedule. If business travel will take you away from regular participation, please clear these dates with me in advance.
- It is essential that all students actively contribute to the course objectives through their experiences and working knowledge of business and IT.
- All assignments must be submitted on schedule, via Blackboard, and using Microsoft Office-compatible software. If you need to submit an assignment via e-mail, contact the instructor in advance. Late work will be reduced in value.
- Assignments must be completed to an adequate standard to obtain a passing grade. Requirements for each assignment are detailed in this syllabus and on the LTU Online web site.
- Be prepared to log into Blackboard at least once each day. Please focus your on-line correspondence within the appropriate Blackboard discussion forums so that your colleagues can learn from you.
- At the end of the course, you will be invited to participate in a University evaluation of this course. Your feedback is important to the University, to LTU Online, and to me as an instructor, and I encourage you to participate in the evaluation process.

**Lawrence Technological University**  
**INT 4013 – Telecommunications & Networks (Online) – CRN 1155 – Fall 2007**

It is important for you as students to know what to expect from me as your instructor:

- I will be available to you via e-mail and phone, and will promptly reply to your messages.
- I will be available to you for face-to-face appointments as requested.
- I will maintain the Blackboard web site with current materials, and will resolve any content-related problems promptly as they are reported to me.
- I will send out a weekly e-mail update to all class members to guide upcoming work and remind you of assignment due dates.
- I will return all assignments to you promptly, and will include individualized comments and suggestions with each assignment.
- I will hold our personal written or verbal communications in confidence. I will not post any of your assignments for viewing by the class without requesting your approval in advance.
- I will treat all members of the class fairly, and will do my best to accommodate individual learning styles and special needs.

If any of these points need clarification, or when special circumstances arise that require my assistance, please contact me so that we can discuss the matter personally.

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**INT 4013 – Telecommunications & Networks (Online) – CRN 1155 – Fall 2007**

• **Course Schedule**

This fully online course begins with a one-week online course orientation period to familiarize yourself with the online learning environment and to meet online or via phone with your instructor. Each week starts on a Monday and ends on a Sunday.

Dates	Modules	Topics / Readings	Assignments Due
Prior to Start of Semester and Week of Aug 29 – Sept 2	Module 0	Overview of textbook Online Learning Orientation Course Orientation and group formation Opt On-ground Orientation: TBA	Course orientation Discussion D0 Quiz Q0
Week of Sept 3– Sept 9	Module 1 (note: more than one module may be scheduled in a week)	Analog Vs Digital. Read Chapter 1 in Annabel Z. Dodd - Transition to digital - Measuring speed and capacity - Compression and Multiplexing - Types of LAN, MAN, WAN	Quiz 1 Discussion D1
Week of Sept 10 – Sept 16	Module 2	Telephone Systems Read Chapter 2 Dodd - VoIP PBX - PBX's - Centrex systems - VoIP Centrex	Quiz 2 Discussion D2
Week of Sept 17 – Sept 23	Module 3	History of Ma Bell Read Chapter chapter 3 On-line reading chapter 10 on Globalization	Quiz Q3 Discussion D3
Week of Sept 24 – Sept 30	Module 4	<b>International Paper Assignment Due</b> Discussion Questions due	<b>International paper</b> Discussion D4
Week of Oct 1 – Oct 7	Module 5	VoIP and the PSTN Read Chapter 4 Annabel Dodd Listen to Podcast from IT Conversations - Convergence in public networks - Voice over broadband - Switched services - Public Switched Telephone Network	Quiz Q5 Discussion D5
Week of Oct 8 – Oct 14	Module 6	Read Chapter 5 Dodd - Virtual Private Networks - Frame Relay - Private line - T1 - ISDN - DSL - Gig E - ATM - SONET	Quiz Q6 Discussion D6
Week of Oct 15 – Oct 21	Module 7	On-line reading - Multi Protocol Label switching (MPLS)	Quiz 7 Discussion D7
Week of Oct 22 – Oct 28	Module 8	Read chapter 8 Dodd - Mobile Services - Cellular networks - Spectrum and rights to airwaves - Mobile Carriers	Quiz 8 Q8 Discussion D8

**Lawrence Technological University**  
**INT 4013 – Telecommunications & Networks (Online) – CRN 1155 – Fall 2007**

Dates	Modules	Topics / Readings	Assignments Due
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Week of Oct 29 – Nov 4	Module 9	Wireless continued Read Chapter 9 Dodd - Wifi - Broadband wireless -Personal area Networks -Sensor networks	Quiz Q9 Discussion D9
Week of Nov 5 – Nov 11	Module10	Major Topic Paper due	Major Topic Paper due
Week of Nov 12 – Nov 18	Module 11	Call Centers - On-line reading	Quiz Q11 Discussion D11
Week of Nov 19 – 25	Module 12	Applications and their impact on networks On-line reading and research	Quiz Q12 Discussion D12
Week of Nov 26 – Dec 2	Module 13	Fiber to the Node & Fiber to the Home On-line reading and research	Quiz Q13 Discussion D13
Week of Dec 3 – Dec 9	Module 14	Course Summary	Discussion D14

**Lawrence Technological University**  
**INT 4013 – Telecommunications & Networks (Online) – CRN 1155 – Fall 2007**

- **Student Evaluation**

The course has five assignments totaling 100 points (left column). Letter grades are awarded based on the total number of points achieved (right column). Points are deducted for late assignments.

Assignments	Points
Biography Assignment	10
Classroom/on-line discussion participation	140
International Paper	50
Module Assignments 2 at 50 points each	100
Quizzes	65
Major Topic Paper	100
Total Points	465

Class Points	Letter Grade
96 and above	A
90 – 95	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
61 – 70	D
60 and below	E

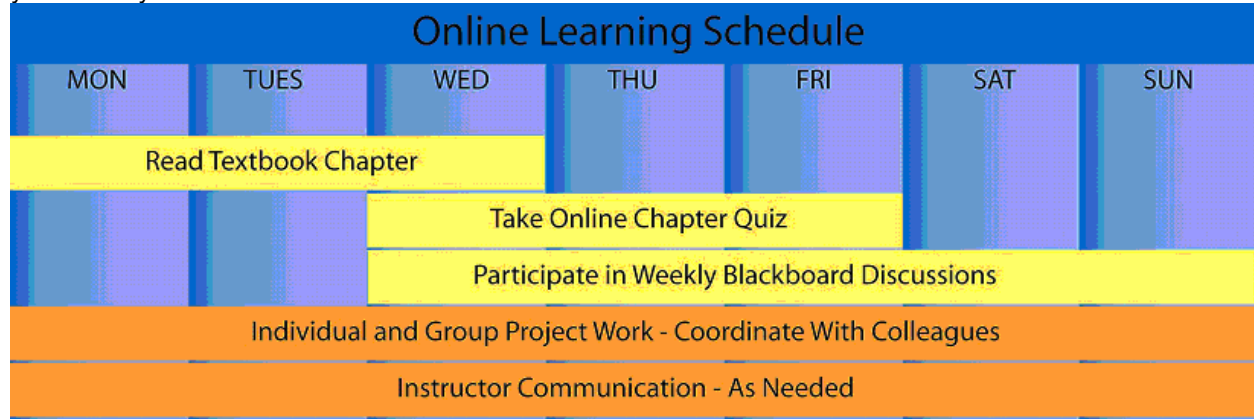
***Note: Grades lower than “B” fall below the LTU graduate standard***

- **Practical Guidelines for Class Load Expectations**

A three-credit graduate course generally requires at least nine hours per week of time commitment. Here are some practical guidelines to help schedule your time commitments for this online course:

1. A 14-week semester (the Summer “E” semester is compressed into 11 weeks) would require at least 126 hours of time commitment to successfully complete all readings, activities, assignments, and texts as described in this syllabus.
2. You should reserve at least 6 hours per week to read the required textbook chapters and resources, participate in online discussions, review presentation materials, and work through online quizzes. This effort will total at least 84 hours over the course of the semester.
3. You should organize your remaining time to roughly correspond with the point value of each major assignment. This means that you should plan to spend at least:
  - 8 – 10 hours researching and writing your topic papers
  - 5 hours completing the 2 module assignments

These guidelines may not reflect the actual amount of outside time that you – as a unique individual with your own learning style – will need to complete the course requirements. The number of hours each week will vary based on assignment due dates, so please plan ahead to insure that you schedule your academic, work, and personal time effectively. The following graphic can be used to guide you in planning your weekly course work to remain on schedule:



- **Assignment Details**

Course assignments and evaluation criteria are detailed below. Please review these requirements carefully. See the section Academic Resources / Assessment Guidelines for information about assessment of written and oral presentations.

Details for all assignments are shown below. Please note that you should **not** submit any assignments to the Blackboard “Digital Drop Box.” All assignments are submitted using the Blackboard “Assignments” function. Some assignments are also posted to the Blackboard Discussion Forum for student comments.

### **Assignment International Topic Paper (50 Points)**

**Overview** – With this assignment I want each student to choose a different country to research their current telecommunications environment from a regulatory perspective. Prior to writing the paper you must send me an e-mail telling me which country you have chosen. If your choice has been taken I will give you suggestions of other countries that are still available.

Proposal:

- Through your research into the regulatory environment for your chosen country you need to be able to articulate and answers to as many of the questions listed below.
  - Regulatory Environment – What is the current status of the privatization for you selected country?
  - Highly regulated by the Government or has it be de-regulated.
  - If it has been de-regulated, when was it deregulated and what happened to the incumbent carrier?
  - Have there been any benefits since de-regulation?
  - Did they follow the steps of deregulation described in class?
  - If it has not been de-regulated, are there plans to de-regulate it and when?
  - What issues are holding it from taking place?
  - Is it a Monopolistic or Competitive Environment?
  - What Level of Competition Exists?
  - Is there a dominant carrier?
  - Who are the Competitors?
  - What Services are offered?
    - Plain old telephone service?
    - Internet?
  - Advanced Data Services such as Frame Relay and ATM (Asynchronous Transfer Mode) for businesses?  
Other?
  - Have there been any benefits since de-regulation?
  - Any significant Telecom issues that you ran into while researching?

**Deliverables:**

The total points possible for this paper are 50.

- 5 page minimum for written work (this does not include the cover page, contents, or references)
- Must site all references within text and on the reference page. This is a research paper so 1 to 3 references does not constitute research
- Paper must include a cover page, table of contents, and reference page with references done in either MLA or APA style.
- All pages must be numbered.
- I want a hard copy delivered to me in class and an electronic copy in the digital drop box. If you do not bring a paper copy to class you will not get credit for the paper.

**Assignment Major Topic Paper (100 Points)**

**Overview** – The Major Topic Paper assignment is designed to give you an opportunity to gain a deeper understanding of a particular technology of interest. It will enable you to understand how to research a technology and be able to explain it to others in terms they can understand. This is a research paper so it will require you to find several sources of information on the particular topic from books, articles, whitepapers, and websites. You are only allowed to site Wikipedia 2 times throughout your paper.

Proposal

To choose a topic you **MUST** present your topic proposal to me prior to starting your research. The topic can be from any of the technologies discussed in class or it can be one you have heard of outside of class. All topics must be approved by me prior to writing the paper.

This is a technical paper with a business application description. This paper can be broken into two parts. The first part is a technical description of the technology and the second part is a description of the business applications driving the use of the technology.

Deliverables:

The total points possible for this paper 100 points.

- **15 page minimum** for written work (this does not include the cover page, contents, or references)
- Must site all references within text and on the reference page. This is a research paper so 1 to 3 references does not constitute research
- Paper must include a cover page, table of contents, reference page with references done in either MLA or APA style.
- All pages must be numbered

**Quizzes and Online Participation (205 points)**

Each student is expected to actively participate in online activities. **Class participation is evaluated to a maximum of nnn points** based on:

- Up to 65 points – Reading the required text chapters and working through the online practice quizzes according to the class schedule; and
- Up to 140 points – Actively participating in Blackboard discussion forums, responding to questions posted by the instructor, and interacting positively with other students.

**On-line Participation Components and Requirements Rubric**

The blackboard participation in discussions is the critical piece of the on-line learning experience so it is important you participate with high quality posts in order to benefit from the course materials. Each student is required to provide quality posts to, a minimum, of:

- Respond to one post from the instructor for each module
- Respond to at least two of your classmates discussion threads each week with a quality response
- If outside material was used to formulate your response the reference must be sited within the post.

Students are required to have posted at least 3 posts per week in the above areas.

Examples:

High quality	Medium Quality	Low Quality
Compression technology is the	Compression technology is the	Compression uses less data.

**Lawrence Technological University**  
**INT 4013 – Telecommunications & Networks (Online) – CRN 1155 – Fall 2007**

<p>process of sending the same amount of information with less data. This can be done by several processes, but the most common is through Time Division Multiplexing or TDM. Time division multiplexing was developed by AT&amp;T and is used throughout the core backbone network for most providers today (<a href="http://www.att.com">www.att.com</a>, 2007)</p>	<p>process of sending the same amount of information with less data.</p>	
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- **Syllabus Addenda**

Please see the LTU Online “Current Students” web site <http://www.ltu.edu/ltuonline/currentonline.asp> for comprehensive information about Lawrence Tech’s academic services, library services, student services, and academic integrity standards. The contents of this web site is explicitly included as syllabus requirements.

The LTU Online “Current Students” web site also includes grading rubrics used by your instructor to evaluate written assignments, discussion forum participation, and group assignments. Please note that the SafeAssignment anti-plagiarism product will be used for written assignments submitted for this course. Please see the instructions included on the LTU Online web site regarding the use of the SafeAssignment product.