

Please note that the specifics of this Course Syllabus are subject to change. Instructors will notify students of any changes and students will be responsible for abiding by them. Even if you print this syllabus, please check the online version often.

## Description

**IST 220: Networking and Telecommunications (3 credits)** - Introduction to digital network topologies; transmission media, signal modulation, digital packet switching and routing, systems integration, communications management, and security.

IST 220 will provide students with a foundational knowledge of the telecommunications and networking industry, as well as the basic concepts inherent to the application of data communications and computer networks in a digital age. This course focuses on the design and development of data communication networks using problems and labs to facilitate student learning. The content provides an introduction to and history of data communications, an overview of different types of networks and network layers, and the future of the industry with a focus on the relationship to e-business and the digital global economy.

## Prerequisites

- none

## Time and Location

Monday, Wednesday: 4:00-5:15pm

202 IST Building

## Goals

- Provide the foundational knowledge of the telecommunications and networking industry.
- Present the basic concepts inherent to the application of data communications and computer networks in the digital age.

## Objectives

Upon completion of this course, students will be able to:

- Explain the components of computer networks and their relationships to each other.
- Explain the impact of Application Layer Protocols on the user and the network
- Describe the how different Transport Layer protocols package data for transmission across the network.
- Discuss how network layer protocols and routers move packets across the network
- Explain the Link Layer and the Physical Layer

## Instructor

- Dr. Dan Coughlin

- [dmc186@psu.edu](mailto:dmc186@psu.edu)
- Office Hours:
  - Thursdays 5:30-6:30pm (no Office Hours on January 26)
  - 209 IST

## Undergraduate Learning Assistants

- Andy Zheng
  - [abz5033@psu.edu](mailto:abz5033@psu.edu)
  - Office Hours: Monday 5:15-6:15pm
- Nada Ziab
  - [nfz5007@psu.edu](mailto:nfz5007@psu.edu)
  - Office Hours: Wednesday 5:15-6:15pm

## Materials

- Kurose, J. & Ross, K. (2016). Computer Networking: A Top-Down Approach (7th ed.). Pearson. ISBN 978-0133594140

## Assignments & Grading

Course Grading Breakdown	
Grading Category	Percentage of Final Grade
Labs	30%
Exams	30%
Attendance	10%
Homework	20%
Quizzes	10%
<b>TOTAL</b>	<b>100%</b>

### Late Work

Assignments are due on the dates provided on the syllabus. However, I will accept work late, but I will assess a penalty of 10% for each day the work is turned in late, to a maximum of 7 days. After 7 days, the “key” or right answers will be posted, and no late work will be accepted after that point. Submit the late work to the drop box on Canvas and email “All Course Faculty” so that we know it’s there.

It is your responsibility to hand in your work and ensure assignments have been properly posted to Canvas. You are IST students and a certain level of technical competence and skepticism is expected. "I thought it worked" isn't an excuse. If canvas is down you can always email myself and the LA's with the attached assignment. If email and canvas aren't working then the world has stopped, seek shelter.

### Course Grading Scale

The following are minimum cutoffs for each grade:

- 93.00% = A
- 90.00% = A-
- 87.00% = B+
- 83.00% = B
- 80.00% = B-
- 77.00% = C+
- 70.00% = C
- 60.00% = D
- less than 60.00% = F

## Course Policies and Expectations

- Logging into Canvas - Students are expected to login regularly to check for course updates, announcements, emails, discussions, etc.
- Emailing through Canvas - Students are expected to use Canvas for all course email communication.

### Attendance

Attendance will be taken each class period via the name card. You will need to initial the name card for each day of the class. This process will be explained in the first class session. Attendance is mandatory on January 18 - April 26 (first week I don't count). Your grade towards attendance is your percentage of classes out of those 27 classes. Each class is 3-4pts, if you miss one class you get  $26/27 = 96\%$ .

Excused absences for official university travel (sports teams, clubs, etc.), religious observance and for out-of-town interviews for internships or jobs **can be REQUESTED one week prior to the class period** by emailing "all course faculty" in Canvas. For cases of illness, injury or family emergency, excused absences are requested the same way, **prior to the beginning the class.**

## Technical Requirements

You will be required to utilize a number of technical systems to accomplish your goals in this course. All required hardware and software will be made available to you on the computers in the classrooms in the IST Building. It may be possible for you to also accomplish some of these tasks remotely and from your own computer. However, it is not the responsibility of the instructor or TA to troubleshoot your computer, your home network or your software problems. If you have difficulty that you are not able to resolve, please use the systems provided for you in the classroom.

## Course Schedule

At the bottom of the syllabus is a rough outline of the week-to-week course schedule. The instructor (that's me, Dan) may modify the schedule. If I do so I will post updates to Canvas and announce them in class, and potentially karaoke if you're lucky.

## Resources

Find extensive information and links to many resources, including the Penn State library, web conferencing, course tools, writing help, and much more on the [Resources](#) page.

## University Policies

### Academic Integrity

The College of IST is committed to maintaining academic integrity in this and all other courses it offers. IST takes academic integrity matters seriously. Academic integrity - scholarship free of fraud and deception - is an important educational objective of Penn State. Academic dishonesty can lead to a failing grade or referral to the [Office of Judicial Affairs](#). Academic dishonesty includes, but is not limited to:

- Cheating
- Plagiarism
- Fabrication of information or citations
- Facilitating acts of academic dishonesty by others
- Unauthorized prior possession of examinations
- Submitting the work of another person or work previously used without informing the instructor and securing written approval
- Tampering with the academic work of other students

In cases where academic integrity is questioned, [Penn State's policy on academic integrity](#) requires that the instructor give the student notice of the charge as well as the recommended sanction. Procedures allow the student to accept or contest the charge through discussions with the instructor. If a student chooses to contest, the case will then be managed by the respective College or Campus Academic Integrity Committee. If a disciplinary sanction also is recommended, the case will be referred to the [Office of Judicial Affairs](#).

All Penn State colleges abide by this Penn State policy, but review procedures vary by college when academic dishonesty is suspected. Information about Penn State's academic integrity policy and college review procedures is included in the information students receive upon enrolling in a course.

Additionally, students enrolled at Penn State are expected to act with civility and personal integrity; respect other students' dignity, rights, and property; and help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self and others, and a civil community.

For more information on academic integrity at Penn State, please visit one of the following URLs:

- <http://www.psu.edu/dept/oue/aappm/G-9.html>
- <http://www.sa.psu.edu/ja/>

Any violation of academic integrity will be investigated, and where warranted, punitive action will be taken. For **every** incident when a penalty of any kind is assessed, a report must be filed.

### Accommodating Disabilities

Penn State encourages academically qualified students with disabilities to participate in its educational programs. We are committed to equal opportunity in our admissions policies and procedures and are dedicated to providing reasonable accommodations for qualified students.

Penn State students seeking special services or academic accommodations through Penn State must self-disclose their need for these services or accommodations to the or Penn State's Office for Disability Services (ODS). [Contact Penn State's Office for Disability Services](#) (ODS).

To be eligible for academic accommodations through ODS, students must have a documented disability as defined by the Rehabilitation Act of 1973 or the Americans with Disabilities Act (ADA) of 1990. [Learn more about the ODS eligibility requirements](#).

The University is responsible for making all its programs and services available to all students. The Office for Disability Services acts in an advisory capacity for all Penn State locations, including the World Campus. The World Campus will work with ODS to make reasonable academic adjustments or accommodations for eligible World Campus students.

Penn State's guidelines for appropriate documentation—and the verification forms necessary for each disability category—may be obtained from the "[Documentation Guidelines and General Information for Students with Specific Conditions](#)" section of the ODS Web site. For more information, contact [ODS](#).

**Americans with Disabilities Act:** IST welcomes persons with disabilities to all of its classes, programs, and events. If you need accommodations, or have questions about access to buildings where IST activities are held, please contact us in advance of your participation or visit. If you need assistance during a class, program, or event, please contact the member of our staff or faculty in charge. Access to IST courses should be arranged by contacting the Office of Human Resources, 332 Information Sciences and Technology Building, (814) 865-8949.

## **Nondiscrimination and Harassment**

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, gender identity or veteran status. Discrimination or harassment against faculty, staff or students will not be tolerated at The Pennsylvania State University. You may direct inquiries to the Office of Multicultural Affairs, 332 Information Sciences and Technology Building, University Park, PA 16802; Tel 814-865-0077 or to the Office of Affirmative Action, 328 Boucke Building, University Park, PA 16802-5901; Telephone: 814-865-4700/V, 814-863-1150/TTY. For reference to the full policy: <http://guru.psu.edu/policies/AD42.html>

## **University-Wide Emergencies**

In the case of a University-wide emergency, please refer to official university communication channels for information regarding campus closures and cancellations. For more general information about the emergency situation, please refer to: <http://news.psu.edu>. You can also follow Penn State on Twitter [http://twitter.com/penn\\_state](http://twitter.com/penn_state) and on Facebook at <http://www.facebook.com/pennstate> for up-to-the minute information during emergencies.

**PSUAlert** is available at <http://psualert.psu.edu/>. This is a service designed to alert the Penn State community via text messages to cell phones when situations arise on campus that affect the ability of the campus - students, faculty and staff - to function normally.

## **Ethical Use of Course Content**

The content provided in this course can be used for educational purposes to understand cyber security concepts and techniques. It can also be used for nefarious purposes. Students are expected to use the course content for their own edification only and shall not apply this knowledge except in the classroom, on specific systems (such as the virtual lab) and only for the purposes defined by the instructor.

Any use of the course's content that is performed without expressed, written permission of the system's owner may be in violation of Penn State University policies as well as local, state and federal laws. The instructor will cooperate fully with all university investigations and the requests of all law enforcement agencies in investigations against students in the course.

You can review current information regarding Penn State policies, including Academic Integrity, Disability Accommodations, Military Accommodations, and many others on the [University Policies](#) page.