

COMPUTER SCIENCE

CPSC S186 01  
INTERNET and TELECOMMUNICATIONS LAW

**(Preliminary)**

**2017 SYLLABUS**

Instructor: Frederick A. Polner, Esq.

Mr. Polner is a communications lawyer who has been practicing in this field for over 35 years, having started his career with the Federal Communications Commission.

Email: [fred@polnerlaw.com](mailto:fred@polnerlaw.com)

Guest Lecture and Field Trips:

There will be one guest lecture and two field trips.

The guest lecture will be by Jonathan Kramer, Esq. who is both a lawyer and Internet/Telecom technologist. Mr. Kramer will explain how cutting edge technologies differ from traditional modes of communication.

The first field trip will be to a place very few people ever are allowed inside. We will take a special tour of the bomb proof, restricted areas of the telephone company's operations center to see how broadband communications has evolved from traditional networks.

The second field trip will be to the Clear Channel Radio studio complex in Hartford, CT. where we will be led on a tour by the chief engineer to see firsthand the role the Internet plays in a modern day broadcast station.

### Course description:

We all use the Internet and broadband communications. Yet, not many of us know how they work or know the legal and public policy issues which have a direct bearing on our use of these technologies. This course will explore some of the cutting edge legal and public policy issues concerning the Internet and telecommunications.

The course starts with an introduction to the framework of who regulates the Internet and telecommunications. Students confront questions about whether there is a need for regulation; and, if there is, who should engage in such regulation and how should it be done.

The course proceeds to a discussion of issues which are overlooked by most people. These issues concern our use of rather mundane devices, such as laptop computers. The course introduces students to the role the unlicensed electromagnetic spectrum plays in the deployment of broadband. How Wi-Fi works will be a centerpiece of this class.

The course then turns its attention to how traditional telephone companies made the transition to broadband companies and how enterprising companies arose to disrupt traditional technologies and compete head on with companies which were dominant at that time. FCC rulings attempted to grapple with these technological changes setting up still unresolved legal and public policy controversies.

Two classes are devoted to the issue of Net Neutrality (sometimes called “The Open Internet”). This issue continues to appear on the front page of newspapers and blogs and is central to the future of the Internet. It concerns whether all information flowing over the Internet should be treated equally.

As the Internet, and particularly wireless devices, has become infused in our daily lives, questions have arisen as to whether there is adequate capacity to satisfy these demands and whether technology is being starved. We will explore how the FCC is confronting these issues in our class on the National Broadband Plan. We also will explore two emerging Internet technologies: Voice over Internet Protocol and Broadband Over Powerline.

The Internet increasingly is being accessed by mobile devices. We will explore the technology behind these devices and how this technology is evolving. Topics will include: 1G, 2G, 3G, 4G LTE, and 5G. Hybrid technology, combining cell phone service with the unlicensed spectrum also will be discussed.

Finally, we will probe how various Internet technologies are converging. We will look at how traditional over-the-air broadcasting and cable TV service have embraced the Internet for distribution of programming. Recent experiments with Over The Top distribution by nontraditional content providers, such as Netflix and Amazon, will be discussed. Attempts to displace traditional media companies by Internet innovators, such as Aereo and Google Fiber will be examined.

Grading: Grades will be based on two exams, a position paper, and class participation. The mid-term will be worth 25%; the final will be worth 35%; class participation will be worth 20%; a short (4-5 page) position paper will be worth 20%. Exams may consist of multiple choice questions, short answer questions, or essays.

No pre-requisites: No prior experience in this area is required. This is an entry level course. Students will be reading original source material but it has been selected such that a person new to this area will be able to understand it.

Readings: All readings will be available on the Yale Canvas website. Because of the continuing developments in technology and the law, some readings may change from those listed.

## **WEEK 1**

### A. Overview and Basic Concepts

1. Electromagnetic Spectrum
2. Scarcity
3. Frequency Allocation
4. Radio Act
5. Communications Act
6. Role of Regulatory Agencies
  - i. FCC
  - ii. FTC
  - iii. NTIA

### B. Computer Hardware and Telephone Equipment

1. Computer Hardware and Peripherals
2. Hush-A-Phone
3. Carterfone
4. Part 68 rules on Customer Premises Equipment
5. The Unlicensed Spectrum
6. Wi-Fi

C. Guest Lecture: Jonathan Kramer.

The guest lecture will be by Jonathan Kramer, who is both a lawyer and Internet/Telecomm technologist. Mr. Kramer will explain how cutting edge technologies differ from traditional modes of communication

**WEEK 2**

D. The Bell System and its Breakup

1. Introduction to Telephony
2. Interstate Communications
3. Intrastate Communications
4. The Bell System Monopoly
5. The MCI gambit
6. The MFJ (Modified Final Judgment)
7. Telephone enters the Broadband era
  - a. "Computer I"
  - b. "Computer II"
  - c. "Computer III"

E. Net Neutrality – Part 1

The issue of Net Neutrality (sometimes called "The Open Internet") has been on the front page of newspapers and blogs. The issue raises core questions about the fundamental nature of Internet, more specifically whether all information flowing over the Internet should be treated equally. The issue is particularly controversial because private companies, not the public, claim they can decide which information receives faster, more accessible treatment.

Part 1 of this class will explain how the Internet works and how the controversy arose.

F. Net Neutrality – Part 2

In Part 2, discussion will center on competing legal justifications favoring or opposing Net Neutrality and how the issue became a lightning rod for political

controversy. This class will explore the public policy arguments on both sides of the issue and explain how the Federal Communications Commission has decided to address it.

### **WEEK 3**

#### G. Field Trip

The first field trip will be to a place very few people ever are allowed inside. We will take a special tour of the restricted areas of the telephone company's "switch" to see how what we learn in the classroom actually happens.

#### H. Mid-Term Exam

#### I. National Broadband Plan

As the Internet, and particularly wireless devices, has become infused in our daily lives, questions have arisen as to whether there is adequate capacity to satisfy these demands and whether technology is being starved. At the behest of Congress, the Federal Communications Commission has crafted a National Broadband Plan to set a course for faster, wider deployment of broadband and how such deployment will stimulate further innovation. This class will explore the National Broadband Plan.

### **WEEK 4**

#### J. Voice over Internet Protocol and Broadband Over Powerline

1. technology
2. state regulatory
3. federal regulatory
4. controversy
5. outlook for tomorrow

#### K. Field Trip

The second field trip will be to the Clear Channel Radio studio complex in Hartford, Ct. Students will be led on a tour by the chief engineer to see first hand the role which computers play in a modern day broadcast station.

#### L. Mobile Networks

1. In the beginning
2. Obtaining a FCC license
3. 1G
4. 2G
5. 3G
6. 4G
7. 5G

### **WEEK 5**

Note: The final exam will be given on Friday of this week.

#### M. and N. Convergence

These two classes will probe how various Internet technologies are converging. It will explore how traditional over-the-air broadcasting and cable TV service have embraced the Internet for distribution of programming. Recent experiments with Over The Top distribution by nontraditional content providers, such as Netflix and Amazon, will be discussed. Attempts to displace traditional media companies by Internet innovators, such as Aereo and Google Fiber will be examined

#### O. Final Exam