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NORTHEAST
WI Technical College

10-451-201 061918 Telecommunications Emerging Technologies

Course Outcome Summary

COURSE INFORMATION

Alternate Title: Telecomm Emerging Tech

Description:

10-451-201 TELECOMMUNICATIONS EMERGING TECHNOLOGIES ...provides students with tools to analyze telecommunications policy and regulations and their impacts on the telecommunication markets. We first review telecommunications industry/organizational structure and concepts of telecommunication technologies. We then discuss key elements of information and communication (ICT) policy and discuss ICT policies and national broadband plans from selected countries. Finally we discuss impact of policy on current and emerging topics such as broadband, VoIP and cognitive radio. The course has an emphasis on policies in developing countries and emerging markets but combines other multidisciplinary aspects related to technology, economics, law.

Instructional Level: 10

Total Credits: 3

Total Hours: 90

COURSE HISTORY

Status: Active

Active Date: 5/23/2021

Last Revision Date: 9/15/2023

Revised By: Kristina Wendricks (15002977)

Last Approval Date: 9/15/2023

Approved By: Kristina Wendricks (15002977)

COURSE COMPETENCIES

1. **Discuss the history of telecommunications from the initial forms of communications to the current state of telecommunications.**

   Status: Active

   Assessment Strategies

   1.1. Discussion

   1.2. Quiz

   Criteria

   Learners will be successful when they are able to:

   1.1. Discuss the progression of communications in our primitive human history

   1.2. Discuss the advantages of communications

   1.3. Discuss the prominent inventors and their inventions that helped foster telecommunications

1.4. Discuss the progression of telecommunications
1.5. Discuss the different mediums of telecommunications today
1.6. Discuss what technologies are becoming obsolete and which technologies are cutting edge

Learning Objectives
1.a. Discuss the earliest forms of communications
1.b. Discuss modern day telecommunications

2. Discuss the global impact of modern day telecommunications on our society.

Status: Active

Assessment Strategies
2.1. Discussion
2.2. Quiz

Criteria

Learners will be successful when they are able to:
2.1. Discuss how highspeed global connectivity shaped the global economy
2.2. Discuss how highspeed global connectivity changed our social behaviors
2.3. Discuss how improved communications improved education
2.4. Discuss how improved communications improved business
2.5. Discuss how improved communications improved health care
2.6. Discuss how telecommunications have changed our individual lives

Learning Objectives
2.a. Discuss the impact on global society
2.b. Discuss the impact of telecommunications on multiple sectors of our daily lives

3. Discuss different nations an their policies with internet connectivity.

Status: Active

Assessment Strategies
3.1. Discussion
3.2. Quiz

Criteria

Learners will be successful when they are able to:
3.1. Discuss what they did right and how they were able to build a robust network
3.2. Discuss errors that may have been made that delayed high speed internet access
3.3. Discuss how a strong economy can foster highspeed internet connectivity in a country
3.4. Discuss how terrain and size of the country can effect a timely high-speed implementation
3.5. How does lack of connectivity negatively impact countries from progressing and advancing

Learning Objectives
3.a. Discuss the most successful countries and their connectivity.
3.b. Discuss struggling countries and their connectivity.

4. Discuss Federal broadband policies and politics.

Status: Active

Assessment Strategies

4.1. Discussion

4.2. Quiz

Criteria

Learners will be successful when they are able to:

4.1. Discuss FCC role in USA broadband policies for wireless connectivity

4.2. Discuss spectrum allocations for wireless providers

4.3. Discuss FCC role in USA broadband policies for fiber optic and copper connectivity

4.4. Discuss the impact how large telco providers shape our public policies

4.5. Discuss the Telecommunications Act of 1996

4.6. Discuss challenges to access public right of way and obtain easements

4.7. Discuss what net neutrality is and why it is important to users

4.8. Discuss privacy concerns over our data and how companies profit from our information

4.9. Discuss the Broadband Infrastructure Development and government funding to role out broadband

4.10. Discuss the Broadband Equity Access and Deployment Program (BEAD)

Learning Objectives

4.a. Discuss Federal policies that affect wireless communications

4.b. Discuss Federal policies that affect hardline communications

4.c. Discuss the Federal political decisions and laws that shape our telecommunications environment

5. Discuss State Permits and broadband policies.

Status: Active

Assessment Strategies

5.1. Discussion

5.2. Quiz

Criteria

Learners will be successful when they are able to:

5.1. Discuss the Public Safety Commission's (PSC) role in telecommunications

5.2. Discuss municipal broadband policies and regulations (Wisconsin State Statute 66.0422)

5.3. Discuss Wisconsin Telecom Policies (Wisconsin State Statute 192.06)

5.4. Discuss telecommunication utility tariffs (Wisconsin State Statute 196.191)

5.5. Discuss Local Exchange Carriers (LEC) and Competitive Local Exchange Carriers (CLEC) policies

5.6. Discuss DOT right of way access and permitting

5.7. Discuss DNR right of way access and permitting

Learning Objectives

5.a. Discuss State policies that affect communications

5.b. Discuss the State political decisions and laws that shape our telecommunications environment

6. Discuss County Permits and broadband policies.

Status: Active

Assessment Strategies

6.1. Discussion

6.2. Quiz

Criteria

Learners will be successful when they are able to:

6.1. Discuss the County's role in telecommunications from public private partnerships to infrastructure access

6.2. Discuss varying County access to affordable highspeed internet

6.3. Discuss County right of way access and permitting

Learning Objectives

6.a. Discuss County policies that affect communications

6.b. Discuss County Right of Way and utility access

7. Discuss Municipal Permits and broadband policies.

Status: Active

Assessment Strategies

7.1. Discussion

7.2. Quiz

Criteria

Learners will be successful when they are able to:

7.1. Discuss the Municipality's role in telecommunications from public private partnerships to infrastructure access

7.2. Discuss varying Municipal access to affordable highspeed internet

7.3. Discuss Municipal right of way access and permitting

Learning Objectives

7.a. Discuss County policies that affect communications

7.b. Discuss County Right of Way and utility access

8. Discuss public utility and railroad policies for new broadband infrastructure.

Status: Active

Assessment Strategies

8.1. Discussion

8.2. Quiz

Criteria

Learners will be successful when they are able to:

8.1. Discuss NESC role for utility pole access

8.2. Discuss local power company attachment master agreements and how they differ between utility companies

8.3. Discuss permitting requirements for longitudinal and perpendicular installations along railroad right of way

8.4. Discuss clearance required for railroad right of way installations and timelines

Learning Objectives

8.a. Discuss Public Utility Policies for utility pole access

8.b. Discuss Railroad Policies for Right of Way access

9. Discuss what the digital divide is, how it affects or communities, and how we can help close. the divide

Status: Active

Assessment Strategies

9.1. Discussion

9.2. Project

Criteria

Learners will be successful when they are able to:

9.1. Discuss how public private partnerships can foster innovation and installations of telecommunication networks

9.2. Discuss the needs for a strong economy and how it relates to telecommunications

9.3. Describe the multiple coordinate systems used for Geospatial representations

9.4. Discuss how being unable to fulfill basic needs causes telecommunications to be a low priority initiative

9.5. Discuss how the underdeveloped country falls further behind developed countries

9.6. Discuss which areas are more or less served by utilizing GIS information

9.7. Discuss the geographic issues and costs to connect rural communities

9.8. Discuss the economic issues to connect poor areas or communities

9.9. Discuss how closing and bridging the digital divide will benefit everyone

9.10. Discuss ideas of bridging the digital divide

Learning Objectives

9.a. Discuss why developed country has an advantage to role out high speed, reliable and affordable internet.

9.b. Discuss why underdeveloped country has a disadvantage to role out high speed, reliable, and affordable internet

9.c. Discuss unserved, underserved, or unaffordable internet access in the USA