



Broadband Academy Course Catalog

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LEARNING PATH

**Broadband Services
Fundamentals for
Business Leaders**

COURSE 1

Broadband Services Fundamentals



In this course, students will be introduced to the fundamentals of building a broadband business, including the five stages, key considerations, and where to start. Students will also learn how broadband works and the types of connectivity that are commonly used today. After completing this course, students will be ready to dive deeper into each stage of building a broadband business.

Course Introduction: [The Role of the Broadband Service Provider](#)

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Understand the changing role of the Broadband Service Provider
- Explain the importance of understanding your subscriber
- Describe the importance of continual innovation

Lesson 1: [The Five Stages of Building a Broadband Network](#)

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Understand the five stages of building a broadband business
- Describe the key factors of each stage

Lesson 2: [The Broadband Network: How it Works](#)

Estimated Time to Complete: 7 minutes

Lesson Objectives:

- Understand how the internet is transferred from the global backbone to the local networks



Lesson 3: Types of Connectivity: Coax vs Wireless vs Fiber

Estimated Time to Complete: 10 minutes

Lesson Objectives:

- Describe how connectivity has changed over the years
- Review the three common types of connectivity and the advantages and disadvantages of each

Lesson 4: Before Funding: The Feasibility Study

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Review the role of a feasibility study and the content that is typically included
- Identify consultants that can help compile the feasibility study
- Identify the questions to ask when assessing consultants

Lesson 5: You Don't Have to Go It Alone: Partners That Can Help

Estimated Time to Complete: 10 minutes

Lesson Objectives:

- Understand the types of partners that can help build a broadband business
- Review the role of each type of partner
- Describe ways to find the right partners



COURSE 2

Funding for Broadband Services



In this course, students will learn about government and private funding for new broadband businesses. After completing this course, students will understand which options could work for their business and how to start finding funding programs and/or partners.

Lesson 1: [An Introduction to Funding: Factors That Determine Availability and Eligibility](#)

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand how the location of your service area affects funding
- Compare the terms “underserved” and “unserved”
- Understand how the part of the network you are building and the technology you are using can affect funding options
- Review how your timeline to build and deploy can affect funding options

Lesson 2: [Government Funding: Programs, Important Considerations, and Resources](#)

Estimated Time to Complete: 13 minutes

Lesson Objectives:

- Review government funding programs
- Understand key considerations for each program

Lesson 3: [Private Funding: Options, Important Considerations, and Resources](#)

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Understand the reasons for exploring private funding
- Compare loans, private equity, and convertible debt

Lesson 4: Securing Private Funding: The Importance of Teaser Documents, Pitch Decks, and Term Sheets

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Understand how teaser documents, pitch decks, and term sheets are used to secure private funding
- Describe the information typically included in each type of document

Lesson 5: The “Dos and Don’ts” of Applying for Government Funding

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand why you shouldn’t limit your funding search to government grants
- Explain why you should become involved in your local community
- Review why you should be prepared to prove your community qualifies for funding
- Understand why you shouldn’t wait for the application window to open to start your application



COURSE 3

Design for Broadband Services



In this course, students will learn about designing a broadband network and some of the key factors that should be considered in the design stage, such as the subscriber, the service area, and the technology. Students will also learn how the design of the access network, middle mile infrastructure, and subscriber home network affects the online experience. Upon completion of this course, students will be able to confidently work with network designers and engineers.

Lesson 1: Start with the Subscriber: Designing a Network that Delivers the Best Experience

Estimated Time to Complete: 12 minutes

Lesson Objectives:

- Explain why it's important to design a subscriber-focused network
- Understand what an 'always on' experience is
- Review the importance of bandwidth and speed, network resiliency, network operating software, and data insights

Lesson 2: Other Network Design Considerations: Getting to Know Your Service Area

Estimated Time to Complete: 10 minutes

Lesson Objectives:

- Understand the geographic and environmental factors that can affect your network design
- Describe how existing utility and telecommunications infrastructure can affect your network design
- Review how the types of subscribers in your service area can affect your network design

Lesson 3: Designing the Access Network

Estimated Time to Complete: 12 minutes

Lesson Objectives:

- Understand what the access network is and how it works
- Review the equipment used in the access network and its purpose
- Describe best practices for designing an access network

Lesson 4: The Middle Mile: Planning and Design Considerations

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand the importance of the middle mile and the infrastructure works
- Describe key planning and design considerations

Lesson 5: The Subscriber Home Network

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand how the subscriber home network works
- Compare the role of modems, routers, gateways
- Review the role of Wi-Fi extenders and mesh units
- Describe how equipment location can affect the Wi-Fi signal
- Explain how a managed Wi-Fi service works and the benefits to your business



COURSE 4

Build for Broadband Services



In this course, students will learn about the construction of the outside plant, being all the physical components used outdoors to transfer the internet signal. Students will also learn the importance of finding the right construction contractor to work with and why the community should be kept informed throughout the build. After completing this course, students will be able to effectively monitor the build and help ensure the construction stages stay on track.

Lesson 1: **Partnering with the Right Contractor**

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Review ways to find and evaluate a construction contractor
- Describe the best practices for building a good working relationship with your contractor

Lesson 2: **The Seven Stages of Constructing the Outside Plant**

Estimated Time to Complete: 11 minutes

Lesson Objectives:

- Compare make ready engineering and make ready construction
- Review fiber construction, splicing, service drop construction, drop splicing, and testing

Lesson 3: **Monitoring the Build: You Can't Expect What You Don't Inspect**

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Review the key monitoring practices
- Understand what you should inspect and monitor before, during, and after the build



Lesson 4: Mitigating Risks During the Construction of the Outside Plant

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Review ways to reduce safety risks on the project site
- Explain how to prevent damage to fiber-optic cables
- Describe ways to reduce future restoration headaches

Lesson 5: Keeping the Community Informed During the Build Stage

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand the importance of providing regular updates before and during construction
- Describe the importance of educating residents on the value of high-speed broadband
- Describe the importance of early marketing campaigns
- Review the importance of having a marketing partner during the build stage



COURSE 5

Operate for Broadband Services



In this course, students will learn what it takes to successfully operate a broadband business, including the staff needed and management processes that should be followed. Students will also learn about common operating challenges and the importance of customer service. After completing this course, students will be ready to provide quality service and support to their subscribers.

Lesson 1: [Before You Deploy: Hiring the Right Staff for Your Broadband Operations](#)

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Review the roles and responsibilities of the staff you will need for your operations

Lesson 2: [Understanding Network Management: How FCAPS Helps Keep Network Operations Running Smoothly](#)

Estimated Time to Complete: 8 minutes

Lesson Objectives:

- Understand the importance of network management procedures, including fault management, configuration management, accounting management, performance management, and security management

Lesson 3: [Operating a Broadband Network: Common Challenges and How to Solve Them](#)

Estimated Time to Complete: 10 minutes

Lesson Objectives:

- Review common challenges that affect network operations, customer support, and the subscriber home network
- Describe solutions that can help overcome operating challenges



Lesson 4: [How to Provide First-Rate Customer Service to Your Subscribers](#)

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand why your entire organization needs to commit to customer service
- Review why it should be easy for subscribers to interact with you and provide feedback
- Describe why continual innovation and service improvement are important

Lesson 5: [Success Stories from Your Peers](#)

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Understand how your peers can help you navigate building and operating a broadband business
- Review how three electric cooperatives are operating broadband networks successfully in small and rural communities
- Review how three municipalities are operating broadband networks successfully in their communities



A photograph of a woman smiling, wearing a name tag, overlaid with a blue tint. The background shows other people in a conference setting.

LEARNING PATH

**Broadband Specifics
for Tribes**

COURSE

Understanding Broadband Services for Tribal Communities



In this course, students will learn about specific considerations that tribes should be aware of when planning to build broadband infrastructure and operate a broadband business. This includes methods of owning and operating a broadband network, funding for tribes' broadband projects, permit requirements for broadband infrastructure projects, and tips for running a for-profit business. After completing this course, students will be ready to begin working on broadband projects for tribes.

Lesson 1: [How to Prepare Your Broadband Services for Future Generations](#)

Estimated Time to Complete: 14 minutes

Lesson Objectives:

- Review the importance of the feasibility study and short and long-term planning
- Understand the importance of education and awareness initiatives
- Explain the importance of ongoing skills training

Lesson 2: [Methods of Owning and Operating a Broadband Network](#)

Estimated Time to Complete: 15 minutes

Lesson Objectives:

- Compare the advantages and disadvantages of tribally-owned and operated broadband with the advantages and disadvantages of partnering with a third-party entity
- Review the role and implications of being an Incumbent Local Exchange Carrier (ILEC)
- Describe the role and implications of being a Competitive Local Exchange Carrier (CLEC)
- Explain the role and implications of being an Eligible Telecommunications Carrier (ETC)

Lesson 3: Funding for Tribes: Eligibility and Availability

Estimated Time to Complete: 12 minutes

Lesson Objectives:

- Describe the common eligibility criteria for broadband funding
- Review the purpose of Calix's state funding map
- Understand the purpose and implications of the FCC's Broadband Map

Lesson 4: Managing Broadband Funding: Best Practices and Obligations

Estimated Time to Complete: 15 minutes

Lesson Objectives:

- Explain the best practices for managing broadband funding
- Compare eligible and ineligible uses of broadband funding
- Understand the common report types and the importance of keeping accurate records

Lesson 5: Permit Requirements for Broadband Infrastructure Deployments

Estimated Time to Complete: 14 minutes

Lesson Objectives:

- Understand the purpose of and how to secure rights-of-way permits
- Review the federal government strategies for improving permitting processes
- Describe the rights for granting right-of-way access on tribal lands and the benefits of establishing land use codes
- Understand the purpose of the Environmental and Historic Preservation Reviews
- Review the process for completing the Environmental and Historic Preservation Reviews

Lesson 6: How to Run a For-Profit Broadband Business

Estimated Time to Complete: 15 minutes

Lesson Objectives:

- Understand the role of marketing campaigns, sales strategy, customer support, a skilled workforce, and data insights





LEARNING PATH

Broadband Specifics for Electric Co-ops

COURSE

Understanding Broadband Services for Electric Cooperatives



In this course, students will learn about specific considerations that electric cooperatives should be aware of when planning to build broadband infrastructure and operate a broadband business. This includes methods of owning and operating a broadband network, advantages and disadvantages of partnering with third-party entities, how broadband infrastructure can improve your electric operations, and tips for running a competitive business. After completing this course, students will be ready to begin working on broadband projects for electric cooperatives.

Lesson 1: **Why Electric Co-ops are Uniquely Positioned to Provide Broadband Services**

Estimated Time to Complete: 10 minutes

Lesson Objectives:

- Describe how electric infrastructure helps to deploy broadband services
- Describe the similarities between operating an electric cooperative and operating a broadband network
- Describe the importance of existing community relationships

Lesson 2: **Options for Owning and Operating a Broadband Network**

Estimated Time to Complete: 13 minutes

Lesson Objectives:

- Describe the advantages and challenges of electric co-op-owned and operated broadband
- Explain the advantages and disadvantages of partnering with a third-party entity
- Understand the common designations of telecommunications providers and the potential implications for Broadband Service Providers

Lesson 3: [How Broadband Infrastructure Can Help Improve Your Electric Operations](#)

Estimated Time to Complete: 9 minutes

Lesson Objectives:

- Describe how connected technologies are used in a smart grid
- Explain the importance of data in a smart grid
- Understand how a fiber broadband network supports smart grid technologies

Lesson 4: [Running a Competitive Broadband Business](#)

Estimated Time to Complete: 14 minutes

Lesson Objectives:

- Describe the importance of marketing campaigns
- Explain how sales strategies help acquire subscribers
- Understand the necessity of a skilled workforce
- Describe the role of data insights

Lesson 5: [The Importance of Data Insights](#)

Estimated Time to Complete: 13 minutes

Lesson Objectives:

- Understand how data becomes actionable insights
- Describe how data insights improve network operations
- Explain how data insights improve the subscriber experience
- Describe how data insights improve marketing efforts

