

# IEEE eLearning Library Course Programs

Cutting-edge online continuing education course programs for technical professionals

## Enterprise Blockchain for Healthcare, IoT, Energy, and Supply Chain (2019)

- Enterprise Blockchain Overview
- Enterprise Blockchain for Grid Modernization
- Enterprise Blockchain for Supply Chain
- Enterprise Blockchain for the Internet of Things
- Enterprise Blockchain for Healthcare Data

## 5G Networks (2019)

- Discover 5G
  - IEEE 802.11 Radio Standards Evolution
- 5G System Principles
  - IEEE 802.11 Radio Technology Components with Focus on 802.11ax, 11ad, 11ay
- Understanding 5G Fundamentals
  - IEEE 802.11 Use Cases for 5G Fixed Wireless Access, Backhaul, VHT/Line of Sight, Dense Urban and Indoor Hotspot

## Finite Element Method for Photonics (2019)

- Introduction to Numerical Methods
- The Basics of Finite Element Method
- Applications of Finite Element Method: Modelling of Optical Waveguides and Fibers
- Applications of Finite Element Method: Modelling of Optical Fibers Including Dispersive Effects
- Applications of Finite Element Method: Modelling of Multilayer Stacks/Anti-reflection Coatings

## Introduction to Edge Computing (2019)

- Overview of Edge Computing
- Practical Applications of Edge Computing
- The Challenges of Edge Computing
- Designing Security Solutions for Edge, Cloud and IoT
- Tools and Software for Edge Computing Applications

## Introduction to IEEE Standard 1547™-2018: Connecting Distributed Energy Resources (2019)

- Introduction to IEEE Std 1547-2018
- Power Quality and Voltage Regulation in IEEE Std 1547-2018
- Response to Area EPS Abnormal Conditions
- Islanding and Networks
- Interoperability, InfoExchange and Network, and Protocols
- Interconnection Test and Verification

## Modernizing the Smart Grid (2018)

- Strong Grid Before Smart Grid
- Smart Distribution Systems
- The Digitized Grid
- Engaging Consumers in the Smart Grid Marketplace

## Artificial Intelligence and Ethics in Design Part 1 (2018)

- Responsible Innovation in the Age of AI
- The Economic Advantage of Ethical Design for Business
- Values by Design in the Algorithmic Era
- The Nature of Nudging
- Ensuring Data Protection and Data Safety

## Artificial Intelligence and Ethics in Design: Responsible Innovation Part 2 (2018)

- From Growth to Great
- The Basis for No Bias
- Transparency and Accountability for Robots and AI Systems
- Human Emotion in Devices and Technology
- Legal and Implementation Issues of Enterprise AI

## Understanding SMPTE Standard 2110 (2018)

*\*Not included with the IEEE eLearning Library Full Collection*

- Background and System Overview
- Video Encapsulation
- Audio Encapsulation
- Data Encapsulation
- Synchronization and Identification
- Traffic Shaping and Delivery Timing

## IEEE Guide to Autonomous Vehicle Technology (2018)

- Cooperation in Autonomous Vehicles
- Developing and Validating Control Systems for Connected and Automated Vehicles
- Human Factors in Vehicle Automation
- Intelligent Control of Connected and Automated Vehicles
- Object Visual Detection for Intelligent Vehicles
- Object Visual Recognition for Intelligent Vehicles
- Sensors for Autonomous Vehicles

# IEEE eLearning Library Course Programs

Discoverable via IEEE Xplore and the IEEE Learning Network

## Introduction to Blockchain (2018)

- Understanding Blockchain Technology: Abstracting the Blockchain
- Understanding Blockchain Technology: The Bitcoin Case Study
- Understanding Blockchain Technology: The Costs and Benefits of Decentralization

## IEEE Guide to the Internet of Things (2017)

- What is the Internet of Things
- IoT Software: Fundamental Concepts and State of the Art
- Exploring IoT Industry Applications: The Evolution of Internet of Things for Healthcare
- Exploring IoT Industry Applications: Limitations of Wireless Technology on Healthcare IoT
- Exploring IoT Industry Applications: Paving the Way for Future IoT Applications in Healthcare
- The Emerging Paradigm of the Social Internet of Things
- Social Internet of Things: Existing Platforms
- Social Internet of Things: Reference Architecture and Use Cases

## National Electrical Safety Code® Course Program (2017)

- Introduction to the National Electrical Safety Code (NESC)
- Changes to the NESC 2017 Edition
- Introduction to Grounding
- NESC 2017: Work Rules for the Operation of Electric Supply and Communications Lines and Equipment
- NESC 2017: Rules for Installation and Maintenance of Electric Supply Stations
- NESC 2017: Safety Rules for Installation and Maintenance of Overhead Electric Supply
- NESC 2017: Safety Rules of the Installation and Maintenance of Underground Electric Supply

## Cybersecurity Tools for Today's Environment (2016)

- Cloud Security
- Cryptography Fundamentals
- Data Security in the Cloud
- Footprinting
- Introduction to Penetration Testing
- Mobile Device Security
- Network Sniffing
- Social Engineering for Cyber Security
- System Fundamentals for Cyber Security
- Web Server & Web Application Security
- WiFi and Bluetooth Security

## Ethical Hacking (2016)

- Scanning
- Enumeration
- System Hacking
- Malware Fundamentals
- Denial of Service Attacks
- Session Hijacking
- SQL Injections
- Evasion Techniques

## Cloud Computing (2015)

- 25 Courses

## Transportation Electrification (2015)

- 23 Courses

## Professional Engineer License (2015)

- 7 Courses

## Fundamentals for Technical Professionals (2015)

- 9 Courses

Learn more about IEEE eLearning Library Course Programs.  
Visit [www.ieee.org/go/elearning](http://www.ieee.org/go/elearning)