

# IEEE eLearning Library Course Programs

Cutting-edge online continuing education course programs for technical professionals

## Automotive Cyber Security: Protecting the Vehicular Network (2020)

- Evolution of Intelligent and Autonomous Vehicles
- Connected Vehicle Communication
- Securing Intelligent Transportation Systems
- Using Blockchain Technology to Secure Autonomous Vehicles
- Collecting, Analyzing, and Interpreting Vehicular Data

## Digital Transformation: Moving Toward a Digital Society (2020)

- Understanding Digital Transformation: The Key Concepts
- Drivers of Digital Transformation: Communications, Big Data, and AI
- Forecasting Digital Transformation: Tools and Methods
- Digital Transformation: Game-Changing Opportunities
- Implementing Digital Transformation: From Theory to Practice

## Machine Learning: Predictive Analysis for Business Decisions (2020)

- Machine Learning in the Age of Enterprise Big Data
- Machine Learning in a Data-Driven Business Environment
- Sound Business Practices for Data Mining and Predictive Analysis
- Machine Learning Algorithms, Models, and Systems Integration
- Machine Learning Platforms, Technology, and Tools

## AI Standards: Roadmap for Ethical and Responsible Digital Environments (2020)

- Organizational Transparency
- Best Practices for Ethical Systems
- A Comprehensive Approach to Digital Ecosystems
- System Design Considerations for Data Privacy
- Configuring Systems for Privacy

## 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

## Smart Distribution: DA/DMS Systems and ADMS Integration with DERs and Microgrids (2019)

- Introduction of DA/DMS Systems
- Distribution System Modeling for DA/DMS Systems
- Advanced Realtime Apps in DA/DMS Systems
- Advanced Analytics Apps in DA/DMS Systems
- Future Developments, ADMS/DER/MG Integration

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## 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

## 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

## Modernizing the Smart Grid (2018)

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

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

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