Communication Networks

Be one of the innovative leaders helping to shape the ever-evolving future of communications and information delivery

- Provides a solid foundation in network and communication theory and application
- Graduates are well positioned to become the next leaders and innovators in the communications industry
30 Credit Hour Program
- Thesis, Capstone, and Comprehensive Exam opportunities
- Program focuses on learning theory through application
- Degree can be achieved in as little as 18 months

Focus Areas in Communication Networks
- Fiber-Optic and Photonic Communications
- Wireless Communications
- Network Design and Management

Ability to obtain up to a year long coop position
Communication Networks

- Program Structure: (10 Course Total)

- Core Courses
  - Wireless Communications
  - Fiber Optic Communications
  - Converged Network Concepts
  - Research Methods
Communication Networks

- Program Structure: (10 Course Total)

Options
(3 course sequence)

- Fiber-Optic and Photonic Communications
- Wireless Communications
- Network Design & Management
Communication Networks

- Program Structure: (10 Course Total)

Comprehensive Exam (3 course sequence)
- Elective
- Elective
- Elective

Capstone Project (3 course sequence)
- Project Course
- Elective
- Elective

Thesis (3 course sequence)
- Thesis I
- Thesis II
- Elective

Choose 1
Communication Networks

- Program Structure: (10 Course Total)

Options
(3 course sequence)

- Fiber-Optic and Photonic Communications
- Wireless Communications
- Network Design & Management
Fiber Optic & Photonic Communications: Course Selection

Choose 3 courses from this set:

- Advanced Fiber-Optic Communications (TCET-745)
- Fiber-Optic Test & Measurement (TCET-789)
- Optoelectronics (EEEE-771)
- Surface Mount Electronics Manufacturing (MFET-655)
Fiber Optic & Photonic Communications: Content Examples

**Advanced Fiber-Optic Communications**
- Coherent technologies
- BER, Q-factor, eye diagrams
- State-of-the-art advances
- Hands-on training

**Fiber-Optic Test & Measurement**
- Test-station design/spec/activation
- Diagnostics & reliability
- Optical polarization
- Hands-on training

**Optoelectronics**
- Operating principles of devices
- Optical resonators & lasers
- Detectors & modulators

**Surface Mount Electronics Manufacturing**
- Advanced packaging
- Board design
- Hands-on training
Wireless Communications: Course Selection

- Advanced Wireless Communications
  TCET-752

- Wireless Networks
  TCET-753

- Wireless Systems Policy
  TCET-750
## Wireless Communications: Content Examples

### Advanced Wireless Communications
- Frequency Equalization
- mmWave Communication
- MIMO massive MIMO Systems
- Software-defined radio

### Wireless Networks
- PHY layer of network
- Wireless DLL
- Wireless MAC
- Wireless Network Protocols

### Wireless Systems Regulation
- Regulating agencies
- Considerations for System Design
- Case studies
Network Design & Management: Course Selection

Choose 3 courses from this set

- Applied Machine Learning
  TCET-620

- Next Generation Networks
  TCET-747

- Network Planning & Design
  TCET-760

- Telecom Network Engineering
  TCET-723
Fiber Optic & Photonic Communications: Content Examples

Applied Machine Learning
- Neural Networks
- Deep Learning
- Training and Validation
- Predictions

Next Generation Networks
- Focuses on Recent Advances
- 5G, Massive MIMO, mmWave
- Physical Layer Advances
- Interned of Things

Network Planning & Design
- Metropolitan & Wide Area Networks
- Analyze Network Flow & Capacity Needs
- Writing Network Proposals

Telecom Network Engineering
- Timing, Synchronization
- Quality of Service
- Network Simulation
QUESTIONS

- **ECTET contact:**
  - Dr. James Lee, Department Chair [jhleme@rit.edu](mailto:jhleme@rit.edu)

- **RIT Home Page:**
  - [www.rit.edu](http://www.rit.edu)

- **ECTET Home Page:**
  - [www.rit.edu/engineering_technology/ectet/](http://www.rit.edu/engineering_technology/ectet/)

- **Join one or all our Social Media Outlets**
  - Instagram: [@ectet_at_rit](https://www.instagram.com/ectet_at_rit)
  - Twitter: [RIT_ECTET](https://twitter.com/RIT_ECTET)
  - Facebook: [RIT ECT Engineering Technology](https://www.facebook.com/RITECTEngineeringTechnology)