Which major does optical fiber cable belong to

Overview

Optical fiber is used as a medium for telecommunication and computer networking because it is flexible and can be bundled as cables. It is especially advantageous for long-distance communications, because infrared light propagates through the fiber with much lower attenuation compared to electricity in electrical cables. This allows long distances to be spanned with few repeaters.

Key Takeaways

Optical fiber cables primarily belong to the fields of Electrical Engineering, Telecommunications Engineering, and Photonics/Optical Engineering.Core Majors

Electrical Engineering (EE) Optical fiber technology is a key component of modern electrical and electronic systems. EE programs cover the principles of signal transmission, circuit design, and communication systems, which include fiber-optic communication networks . Telecommunications Engineering This major focuses specifically on data transmission technologies, including fiber-optic networks for high-speed internet, telephone, and cable television systems. Students learn about network design, signal propagation, and optical fiber installation . Photonics or Optical Engineering Photonics deals with the science and application of light. Optical engineering programs cover the physics of light propagation, fiber optics, lasers, and optical devices, which are essential for designing and optimizing fiber-optic cables .

Related Fields
• Computer Networking and Information Technology: Focuses on the practical deployment of fiber-optic networks, including network infrastructure, data centers, and high-speed communication systems .

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• Materials Science and Engineering: Studies the glass, polymers, and coatings used in fiber cores and cladding, which are critical for performance and durability .

• Electronics and Instrumentation: Covers the devices that generate and detect light signals, such as lasers and photodetectors, which are integral to fiber-optic systems .
Summary

Optical fiber cables are interdisciplinary, but the primary academic majors are Electrical Engineering, Telecommunications Engineering, and Photonics/Optical Engineering. Students in these fields gain the knowledge to design, implement, and maintain fiber-optic communication systems, while related fields like computer networking, materials science, and electronics provide complementary expertise .

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Optical fiber

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