

**UNIT-I**

Introduction to Radio Over Fiber (ROF)-Concept-Categories-Performance of ROF systems-  
Microwave properties of optical links-Loss-Noise-Direct and External modulation-Advantages-  
Application of ROF.

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**UNIT-II**

Components for ROF systems-Analog modulation of LASER diode-LASER diode  
fundamentals-Rate equation-Intensity and Frequency modulation-LASER diode noise and their  
influence on link performance.

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**UNIT-III**

Analog fiber optic links -Sub carrier optical fiber transmission systems-Fiber optic transmission  
of QAM signals- Sub Carrier Multiplexed (SCM) fiber optic transmission systems-Capacity of  
coaxial and fiber optic links-Comparison of coaxial and fiber optic links- System level analysis  
and design of fiber optics link-Low cost analog fiber optics link-LASER diode and Photodiode  
nonlinearities.

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**UNIT-IV**

ROF based Fiber-Wireless (Fi-Wi) Systems-ROF Fi-Wi architecture-Major Issues- Fiber-Feeder  
approaches-Important Fi-Wi link elements-Baseband-RF modulation techniques-Power link  
budget and Cumulating SNR-Noise process in ROF link- SCM link.

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**UNIT-V**

ROF technology for next generation-Fiber optic radio networking -radio highway-photonic  
TDMA Highway-routing networks.  
ROF cellular and Fi-Wi for future wireless applications-3G cellular systems-UMTS-WCDMA  
ROF systems-ROF for Hiper LAN-5G and OFDM wireless networks.

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- William S.C.Chang, "RF Photonic Technology in Optical Fiber Links" Cambridge University Press, 2002.
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Senate  
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