Proposed Contents of the Course
Optical Communications

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References:

1. **R. Ramaswami and K. N. Sivarajan, *Optical Networks* [main text book]**
2. **Stewart E. Miller and A. G. Chynoweth, *Optical Fiber Telecommunications***
3. **Added Lecturer**

Contents:

1. **Introduction to Optical Communications**
   - **Telecommunication Networks**
   - **First-Generation Optical Networks**
   - **Multiplexing Techniques**
   - **Second-Generation Optical Networks**
2. **Propagation of signals in Optical Fiber**
   - **Light Propagation in Optical Fiber**
   - **Loss and Bandwidth**
   - **Chromatic Dispersion**
   - **Nonlinear Effects**
   - **Solitions**
3. **Components used in the Optical Communications**
   - **Couplers**
   - **Isolators and Circulators**
   - **Multiplexers and Filters**
   - **Optical Amplifiere**
   - **Transmitters**
   - **Detectors**
   - **Switches**
   - **Wavelength Converters**
4. **Modulation and Demodulation**
   - **Modulation**

- **Demodulation**

5. **First-Generation Optical Networks**
   - **SONET/SDH**
   - **MAN – Metropolitan Area Network**
   - **Layered Architecture**
6. **Wavelength Routing Network**
   - **The Optical Layer**
   - **Node Design**
   - **Routing and Wavelength Assignment**
7. **Access Network**
   - **Network Architecture Overview**
8. **Photonic Packet Switching**
   - **OTDM**
   - **Optical Phase Lock Loop**