



## **7. Brief list of topics to be covered**

- Fiber types, index profile, numerical aperture, multimode and gradient single-mode fibers, index radius, left-radius light propagation (2 lectures)
- Wave propagation in optical fibers: field expressions for TE, TM, HE and EH modes (2 lectures)
- Attenuations and dispersions in optical fibers (2 lectures)
- Optoelectronic transmitters (1 lecture)
- Optoelectronic receivers (1 lecture)
- Optical fiber systems: point-to-point fiber links (2 lectures)
- Lab experiments (2 lectures)
- Optical components: couplers, isolators, circulators, WDM multiplexer/demultiplexer couplers, add and drop multiplexers, optical cross-connect (OXC), regenerative repeaters, and optical amplifiers; optical network architecture (3 lectures)
- Optical fiber systems: amplified links and WDM links (3 lectures)
- Optical access networks: FTTx architectures, passive optical networks, and active optical networks (3 lectures)
- Optical transport networks (SDH/SONET networks) and wavelength routing networks (2 lectures)
- IP in all-optical networks – optical switching networks: optical circuit-switched networks, optical packet-switched networks, and optical burst switching networks (1 lecture)