

LESSON PLAN

| Period | Date (tentative) | Topic | Unit No. | Teaching Methodology | Remarks | Corrective Action Upon Review |
|--------|------------------|--|----------|----------------------|---------|-------------------------------|
| 1. | 20/5 14/7 | Overview of Total syllabus | I | BB | | |
| 2. | 15/7 | Overview of O.C. - History development | | " | | |
| 3. | 15/7 | One general system, advantages of OFC | | " | | |
| 4. | 13/7 | Introduction to optical fiber waveguide | | " | | |
| 5. | 20/7 | Ray theory for transmission | | " | | |
| 6. | 28/7 | Total internal reflection, Acceptance angle | | " | | |
| 7. | | Numerical aperture | | " | | |
| 8. | 22/7 | Skew rays | | " | | |
| 9. | | Cylindrical fibers - Mode | | " | | |
| 10. | 22/7 | V number, Mode Coupling | | " | | |
| 11. | | Step index & graded index fibers | | " | | |
| 12. | 24/7 | Problems related to unit I | | " | | |
| 13. | 28/7 | Single mode fiber - cut off wavelength | II | " | | |
| 14. | | Mode field diameter, effective refractive index | | " | | |
| 15. | 29/7 | Fiber microbends - Glass, Plastic | | " | | |
| 16. | 29/7 | Active glass, chalcogenide, plastic optical fibers | | " | | |
| 17. | 31/7 | Signal distribution in OFCs - Attenuation | | " | | |
| 18. | | Absorption | | " | | |
| 19. | 4/8 | Scattering & Bending losses | | " | | |
| 20. | 5/8 | Coupling & cladding losses | | " | | |

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| 21. | 8/8 | Problems related to unit II | II | BB | | |
| 22. | 5/8 | Information capacity determination, Group delay | III | " | | |
| 23. | 7/8 | Types of dispersion - Material dispersion | | " | | |
| 24. | 11/8 | Wave guide dispersion | | " | | |
| 25. | 12/8 | Polarization mode dispersion | | " | | |
| 26. | | Intermodal dispersion | | " | | |
| 27. | | Pulse broadening | | " | | |
| 28. | 12/8 | Optical fiber connectivity - Connector types | | " | | |
| 29. | 14/8 | Single mode fiber connectors | | " | | |
| 30. | 18/8 | Connectors - Mechanical loss | | " | | |
| 31. | 19/8 | Fiber splicing - Splicing techniques | IV | " | | |
| 32. | | Splicing single mode fibers | | " | | |
| 33. | 19/8 | Fiber alignment & joint loss | | " | | |
| 34. | 21/8 | Multi mode & Single mode fiber joints | | " | | |
| 35. | 25/8 | Optical sources - LEDs, semiconductor, Microcavity | | " | | |
| 36. | 26/8 | Quantum efficiency, Power, Modulation, Power bandwidth product | | " | | |
| 37. | 26/8 | Injection Laser diodes - Modes | | " | | |
| 38. | 28/8 | Threshold Conditions | | " | | |
| 39. | 1/9 | External quantum efficiency | | " | | |
| 40. | 2/9 | | | | | |

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| 31 | 2/9 | Local decoder suite equation, Residual length | IV | G.S | | |
| 32 | 4/9 | Reliability of LED & ILD | | " | | |
| 33 | 15/9 | Source to fibre output power, loss, output patterns. | V | " | | |
| 34 | 16/9 | Power coupling, power loss characteristics | | " | | |
| 35 | 16/9 | Excitation of N.A. | | " | | |
| 36 | 16/9 | Losses due to fibre coupling | | " | | |
| 37 | 22/9 | Optical detection - Physical processes & PIN & APD | VII | " | | |
| 38 | 23/9 | Detection response time, Temp. effect on Avalanche gain | | " | | |
| 39 | 23/9 | Comparison of photodiodes | | " | | |
| 40 | 23/9 | Optical receiver operation - Fundamental receiver operation | | " | | |
| 41 | 25/9 | Digital signal transmission | | " | | |
| 42 | 25/9 | Serial bus | | " | | |
| 43 | 30/9 | Receiver Consideration | | " | | |
| 44 | 30/9 | Digital receiver performance, Probability of error | | " | | |
| 45 | 7/10 | Quantum limiting Analog receiver | | " | | |
| 46 | 7/10 | Optical system design - Constraints, Component choice | VII | " | | |
| 47 | 9/10 | Multiplexing | | " | | |
| 48 | 13/10 | Point to point links, system considerations | | " | | |
| 49 | 14/10 | Link power budget with examples | | " | | |
| 50 | 14/10 | Overall fibre dispersion in some of multi mode fibre | | " | | |

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| 51 | 16/10 | Rise time budget with examples | VII | G.S | | |
| 52 | 20/10 | Transmitter distance | VIII | " | | |
| 53 | 21/10 | Line coding in optical links | | " | | |
| 54 | 21/10 | WDM, Necessity | | " | | |
| 55 | 23/10 | Principles, Types of WDM | | " | | |
| 56 | 23/10 | Measurement of Attenuation & Dispersion Eye pattern | | " | | |
| 57 | 28/10 | | | | | |
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