TCOM 515: Optical Networking
Thursdays, 6PM-9PM, in Towne 311

Professor: **Dr. Mark R. Wilson**
E-Mail: mwilson@ee.upenn.edu
Office: Towne 276
Office Hours: Thursdays after class, or by appointment

Primary Textbook: *Optical Networks: A Practical Perspective, 2nd Edition*, by Rajiv Ramaswami and Kumar N. Sivarajan, Morgan Kaufmann Publishing, Inc., 2002.

Class Dates	Lecture Topics & Class Activities	Reading Assignments
January 18	**Lecture 1:** Introduction to Optical Networks	Textbook: 1.1-1.8 Paper: Optical Fiber Communications
January 25	**Lecture 2:** Propagation of Signals in Optical Fiber	Textbook: 2.1-2.5; Appendices D, E & F
February 1	**Lecture 3:** Passive Components **Submit Homework 1**	Textbook: 3.1-3.3
February 8	**Lecture 4:** Active Components	Textbook: 3.4-3.8
February 15	**Lecture 5:** Modulation and Demodulation **Submit Homework 2**	Textbook: 4.1-4.5; Appendices H & I
February 22	**Lecture 6:** Transmission Engineering **Submit Homework 3**	Textbook: 5.1-5.9; 5.12
March 1	**Lecture 7:** SONET/SDH & Packet Protocols **Submit Homework 4**	Textbook: 6.1-6.5 Paper: SONET/SDH Tutorial
March 15	**Midterm Exam** (90 minutes; closed book & notes) **Lecture 8:** WDM Elements; WDM Network Design	Textbook: 7.1-7.4; 8.1
March 22	**Lecture 9:** Control & Management; OTN Standards **Submit Homework 5**	Textbook: 9.1-9.6 Paper: OTN Overview
March 29	**Lecture 10:** Network Survivability	Textbook: 10.1-10.6 Paper: Survivability in Optical Networks
April 5	**Lecture 11:** Packet over NG-SONET/SDH & OTN **Submit Homework 6**	Papers: GFP Overview; Data-over-Transport Applications
April 12	**Lecture 12:** Network Deployment Considerations	Textbook: 13.1-13.2 Paper: Application Domain Analysis
April 19	**Lecture 13:** Optical Access Networks **Submit Homework 7**	Textbook: 11.1-11.3 Paper: Passive Optical Networks
April 26	**Final Exam** (120 minutes; closed book & notes): 6PM-8PM	

Grading: The course grade will be determined as follows:

Homework Assignments:	20%
Midterm Exam	30%
Final Exam:	50%
Class Participation:	±5%