DEPARTMENT OF ELECTRICAL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITY OF ALEXANDRIA
EGYPT

0714690: Optical WDM Networks

Prof. Hossam Shalaby, *Email: shalaby@ieee.org*

I. Outline

- Review
- WDM concepts and components
- WDM multiplexers
- Wave propagation in crystals
- Single-hop WDMA optical networking
- Transmission protocols in optical networks
- Broadcast-and-select single-hop networks
- Wavelength-routing WDMA networks

II. Text Book and References

⋆[1] G. Keiser, *Optical Fiber Communications.* 3rd ed. New York: McGraw-Hill, 2000.

[2] D. K. Mynbaev L. L. Scheiner, *Fiber-Optic Communications Technology.* Upper Saddle River, New Jersey: Prentice Hall, 2001.

[3] A. Yariv, *Optical Electronics in Modern Communications.* 5th ed. New York: Oxford, 1997.

[4] P. E. Green, *Fiber Optic Networks.* Englewood Cliffs, New Jersey: Prentice Hall, 1993.

[5] A. Borella, G. Cancellieri, and F. Chiaraluce, *Wavelength Division Multiple Access Optical Networks.* Norwood, Massachusetts: Artech House, 1998.

III. Handouts and Assignments

- Handouts and assignments can be downloaded from http://www.alex.edu.eg/users/hshalaby/
- Students are not allowed to leave any copy from the handouts at any photocopy center. If this happened, the downloading facility would stop immediately.

IV. Teaching and Assessments

- Teaching hours per week:
  1) Lectures: 2 hrs.
  2) Tutorials and quizzes: 0.5 hrs.
- Distribution of a total mark of 100:
  1) Class works (20 marks): These marks are divided among quizzes, class discussions, and homework. A quiz (possibly oral) is normally performed in each class.
  2) Seminars (20 marks): Every student should present at least one seminar and submit a report on the latest technology in optical networks. Seminars are presented at the last two weeks of the course.
  3) Final exam (60 marks): Closed book exam.
- Attendance:
  1) Attendance is conducted every week.
  2) Students that will be absent more than 25% of total teaching weeks shall not be allowed to enter the final exam.