

NEWARK COLLEGE OF ENGINEERING

SYLLABUS AND COURSE INFORMATION

Course Name: Transmission Systems

Course Number: ECET 418

Course Structure: 2-2-3 (lecture hr/wk – lab hr/wk – course credits)

Course Description: A study of wireless and terrestrial transmission systems with an emphasis on fiber optics and the latest wireless techniques. The lectures examine the technologies as well as the advantages and disadvantages of the various transmission techniques. The laboratories are a mixture of fiber optic, microwave, and wireless experiments providing hands-on experience in these important areas.

Prerequisites: ECET 214 and Junior or Senior Standing

Corequisites: None

**Required, Elective,
or Selected Elective:** Elective

Required Materials: **Text:** Name: Fiber Optic Communication
Author: Joseph Palais
Year: 2005
ISBN: 978-0-13-008510-8
Text: Name: Wireless Communications: Principles and Practice
Author: Rappaport
Year: 2002
ISBN: 978-0-13-042232-3

Course Outcomes: By the end of the course students are able to:

1. Use an RF spectrum analyzer.
2. Use various optical test instruments including: OTDR, optical power meter, optical spectrum analyzer, and monochrometer, etc.
3. Understand how to increase capacity in wireless networks.
4. Understand wave propagation and fading.
5. Understand various modulation formats.
6. Understand basic optical properties.
7. Understand the fundamentals of optical networks.
8. Understand optical elements, such as fibers, couplers, EDFAs, WDMs, LASERs, detectors, etc.

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| Class Topics: | Wireless Systems | Terrestrial Transmission Systems |
| | Fiber Optics | Modulation |
| | Antennas | Transmission Equipment |
| | Encoding | Reception |

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Academic Integrity: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Modification to Course: The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course Outline.

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