

ITT Technical Institute

ET456

Digital Communication Systems II

Onsite Course

SYLLABUS

Credit hours: 4

Contact/Instructional hours: 50 (30 Theory Hours, 20 Lab Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisite: ET455 Digital Communication Systems I

Course Description:

A continuation of Digital Communication Systems I, emphasizing more advanced concepts such as multiple access, spread spectrum and synchronization methods.

Curriculum is designed to promote a variety of teaching strategies that support the outcomes described in the course objectives and that foster higher cognitive skills. Delivery makes use of various media and delivery tools in the classrooms.

Student Textbook and Materials

Text: Tomasi, Wayne. Advanced Electronic Communications Systems. 6th ed., Englewood Cliffs, N.J.: Prentice-Hall, 2004. (used in previous course: ET455)

Text: Digital Communication Systems, Custom 1st ed., Boston: MA, Pearson Custom, 2005.

Lab Manual: Tavaholi, Mohamad. Revised Digital Communication II Laboratory Manual, Custom 2nd ed., Boston: MA, Pearson Custom, 2010.

Course Outline

| Unit | Topic (Lecture Period) | Chapters | Lab and Other Coverage |
|---|---|---|--|
| 1 | Microwave Radio Communications I | Tomasi, 13 | Lab Exercise 1 Homework Exercises |
| 2 | Microwave Radio Communications II | Tomasi, 13 | Lab Exercise 2 Homework Exercises |
| 3 | Microwave Radio System Gain Exam 1 (Units 1-3) | Tomasi, 13 | Lab Exercise 3 Homework Exercises |
| 4 | Satellite Communications I | Tomasi, 14 | Lab Exercises 4, 5 Homework Exercises |
| 5 | Satellite Communications II | Tomasi, 14 | Lab Exercise 6 Homework Exercises |
| 6 | Multiple Access Techniques Exam 2 (Units 4-6) | Tomasi, 15 | Lab Exercises 7, 8, 9 Homework Exercises |
| 7 | Synchronization Techniques I | DCS, 1 | Lab Exercises 10, 11 Homework Exercises |
| 8 | Synchronization Techniques II Exam 3 (Units 7-8) | DCS, 2 | Lab Exercise 12 Homework Exercises |
| 9 | Spread Spectrum Techniques I | DCS, 3 | Lab Exercises 13, 14, 15, 16 Homework Exercises |
| 10 | Spread Spectrum Techniques II | DCS, 4 | Lab Exercises 17, 18 Homework Exercises |
| 11 | Review and Final Examination | The final examination will be based on the content covered in Units 1 - 10. | |
| NOTE: DCS = Digital Communication Systems text. | | | |

Evaluation Criteria and Grade Weights

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|------------------|-----|
| ■ Homework | 25% |
| ■ Unit Exams (3) | 30% |
| ■ Lab exercises | 30% |
| ■ Final exam | 15% |

Final grades will be calculated from the percentages earned in class as follows:

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|----|-----------|-----|
| A | 90 - 100% | 4.0 |
| B+ | 85 - 89% | 3.5 |
| B | 80 - 84% | 3.0 |
| C+ | 75 - 79% | 2.5 |
| C | 70 - 74% | 2.0 |
| D+ | 65 - 69% | 1.5 |
| D | 60 - 64% | 1.0 |
| F | <60% | 0.0 |