Name ..... ID ..... Section ..... Seat No .....

Sirindhorn International Institute of Technology
Thammasat University

Midterm Exam: Semester 1, 2011

Course Title: ITS323 Introduction to Data Communications

Instructor: Steven Gordon

Date/Time: Monday 1 August 2011; 9:00–12:00

Instructions:

- This examination paper has 17 pages (including this page).
- Conditions of Examination: Closed book; No dictionary; Non-programmable calculator is allowed
- Students are not allowed to be out of the exam room during examination. Going to the restroom may result in score deduction.
- Students are not allowed to have communication devices (e.g. mobile phone) in their possession.
- Write your name, student ID, section, and seat number clearly on the front page of the exam, and on any separate sheets (if they exist).
- Assume bits are ordered from left to right. For example, for the data 00001111, the first (1st) bit is 0 and the last (8th) bit is 1.
- Assume the speed of transmission is 3×10^8 m/s
- Free space propagation path loss:

$$\frac{P_t}{P_r} = \frac{(4\pi d)^2}{G_t G_r \lambda^2}$$

- Antenna gain for parabolic antenna with effective area A_e:

$$G = \frac{4\pi A_e}{\lambda^2}$$

Midterm Exam

8 questions

3 hours

Upto and including Digital Data Communication Techniques

Use exams from previous years, as well as quizzes, as practice.

Free space and antenna gain equations are given on front page.

Need to know NRZL and NRZI; do not need to memorise other digital data/digital signal encoding techniques (e.g. Bipolar, Manchester)