

Course Syllabus

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| 1. Program of Study | Bachelor of Science (Computer Science) |
| Faculty/Institute/College | Mahidol University International College |
| 2. Course Code | ICCS 323 |
| Course Title | Computer Data Communications |
| 3. Number of Credits | 4 (Lecture/Lab) (4-0) |
| 4. Prerequisite(s) | ICCS199 Computer Concept and Fundamental ICPY 211 General Physics I |
| 5. Type of Course | Required |
| 6. Trimester / Academic Year | 1 st and 2 nd trimesters / every academic year |

7. Course Description

Basic communication theory. Principal components of data communications and networks. Local area networks. Network protocols and line control procedures. Communication carrier facilities. System planning and network design.

8. Course Objective(s)

After the completion of the course, students will

1. Understand the basic communication processes and components,
2. Know the theories behind data communication process and implementation,
3. Understand the cause of distortion and communication failures,
4. Know how the communication device work.

9. Course Outline

| Week | Lecture | Hour | Instructor |
|------|---|------|-----------------------------------|
| 1 | What is data communications? | 4 | Mr. Pornchai Olarikded |
| 2 | OSI 7 layers model and implementaion | 4 | |
| 3 | Nyquist and Shannon theorems. Fourier Analysis. | 4 | |
| 4 | Physical media properties | 4 | |
| 5 | Data communication processes: duplex, modulation-demodulation, coding-decoding, | 4 | |
| 6 | Physical layer characteristics | 4 | |
| 7 | Midterm Examination | 4 | |
| 8 | Datalink layer process and characteristics | 4 | |

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| 9 | Data communication infrastructures: Telephone system, mobile phone, satellite | 4 |
| 10 | Wireless communication | 4 |
| 11 | Network layer process and characteristics | 4 |
| | Total | 44 |

10. Teaching Method(s)

1. Lectures
2. Device demonstrations
3. A small work shop

11. Teaching Media

1. Textbooks
2. Lecture notes
3. Powerpoint presentations

12. Measurement and evaluation of student achievement

| Marks | Grade |
|------------|-------|
| 81 or more | A |
| 76 – 80 | B+ |
| 71 – 75 | B |
| 66 – 70 | C+ |
| 61 – 65 | C |
| 56 – 60 | D+ |
| 51 – 55 | D |
| 50 or less | F |

13. Course evaluation

| Components | % |
|---------------------|------------|
| Quiz and assignment | 25 |
| Midterm Exam | 35 |
| Final Exam | 40 |
| Total | 100 |

14. Reference(s)

1. Computer Networks: Andrew S. Tanenbaum, Pearson
2. Computer Data Communication and Networking, : Berouz A.Fourozan, McGraw-hill

15. Instructor(s)

Mr. Pornchai Olarikded

16. Course coordinator

Mr. Pornchai Olarikded