

University of Puerto Rico
 Mayagüez Campus
 College of Engineering
 Department of Electrical and Computer Engineering
 Bachelor of Science in Computer Engineering

Course Syllabus

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| 1. General Information: | |
| Alpha-numeric codification: ICOM 5026 Course Title: Computer Networks Number of credits: 3 Contact Period: 3 hours of lecture per week Elective in ICOM | |
| 2. Course Description: | |
| English: Most relevant aspects of computer communication including the OSI and Internet layering models and networking protocols at Subnetwork, Network, Transport, and Application Layers. The course will also cover different Computer Networks media and standards as well as the software, hardware, and terminology associated with Data Communications. | |
| Spanish: Aspectos mas importantes de la comunicación entre computadoras incluyendo modelos de capas OSI y del Internet y los protocolos de Redes en las capas de Subred, Red, Transporte y Aplicación. El curso cubrirá además diferentes medios y estándares aplicados a las redes de computadoras así Como el Software, Hardware y la rerminología asociada con comunicaciones de datos. | |
| 3. Pre/Co-requisites and other requirements: | |
| Pre-requisite ICOM 5007 . | |
| 4. Course Objectives: | |
| Students will learn about the Fundamental protocols for network design, implementation and testing. They will design secure network systems and analyze the performance of communication protocols. | |
| 5. Instructional Strategies: | |
| <input checked="" type="checkbox"/> conference <input type="checkbox"/> discussion <input checked="" type="checkbox"/> computation <input type="checkbox"/> laboratory <input type="checkbox"/> seminar with formal presentation <input type="checkbox"/> seminar without formal presentation <input type="checkbox"/> workshop <input type="checkbox"/> art workshop <input type="checkbox"/> practice <input type="checkbox"/> trip <input type="checkbox"/> thesis <input type="checkbox"/> special problems <input type="checkbox"/> tutoring <input type="checkbox"/> research <input type="checkbox"/> other, please specify: | |
| 6. Minimum or Required Resources Available: | |
| Students will use the Departmental computer laboratories to complete homeworks. | |
| 7. Course time frame and thematic outline | |
| Outline | Contact Hours |
| Introduction to Computer Networks | 4 |
| The Physical Layer | 4 |
| The Data Link Layer | 8 |
| The Medium Access Control Sublayer | 7 |
| The Network Layer | 6 |
| The Transport Layer | 6 |
| The Application Layer | 2 |
| Network Security | 3 |
| Review | 3 |
| Exam | 2 |
| Total hours: (equivalent to contact period) | 45 |

8. Grading System Quantifiable (letters) Not Quantifiable**9. Evaluation Strategies** (Suggested): The faculty member teaching the course will provide the student with the evaluation strategy he/she will be using throughout the semester. This will be done within the first week of classes.

| | Quantity | Percent |
|--|----------|-------------|
| <input checked="" type="checkbox"/> Exams | 2 | 40% |
| <input checked="" type="checkbox"/> Final Exam | 1 | 30% |
| <input type="checkbox"/> Short Quizzes | | |
| <input type="checkbox"/> Oral Reports | | |
| <input type="checkbox"/> Monographies | | |
| <input type="checkbox"/> Portfolio | | |
| <input type="checkbox"/> Projects | | |
| <input type="checkbox"/> Journals | | |
| <input checked="" type="checkbox"/> Other, specify: Homework | variable | 30% |
| TOTAL: | | 100% |

10. Bibliography:

James F. Kurose, Keith W. Ross, "Computer Networking: A Top-Down Approach Featuring the Internet", 3rd Ed. Morgan-Kaufmann, 2004

Andrew S. Tanenbaum, "Computer Networks," Forth Edition, Prentice Hall, 2002.

11. According to Law 51

Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Student with Disabilities Office which is part of the Dean of Students office (Chemistry Building, room 019) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

12. Contribution of Course to meeting the requirements of Criterion 5:

| Math | Basic Science | General | Engineering Topic |
|------|---------------|---------|-------------------|
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13. Course Outcomes

1. Describe the layered model in computer networks.
2. Analyze the structure of computer networks.
3. Analyze the protocols in computer networks.
4. Evaluate the performance of protocols in computer networks.
5. Find the networking standards through Internet.

Map to Program Outcomes

- (a)
(a)
(a)
(a)
(j)

Person (s) who prepared this description and date of preparation: Yi Qian. Submitted by: Manuel Rodríguez, march 2007