

CIIC 4070 - Course Syllabus

1. General Information:

Alpha-numeric codification: CIIC 4070
Course Title: Computer Networks
Number of credits: 3
Contact Period: 3 hours of lecture per week

Equivalent Course: ICOM 5026

2. Course Description:

English: Study and development of skills required for the design of network protocols and network-centric applications, with emphasis on Internet protocols. Topics include: the ISO layered model, TCP/IP, routing, client-server model, World Wide Web, and Web Services. Practice with analysis and programming problems.

Spanish: Estudio y desarrollo de destrezas para el diseño de protocolos y aplicaciones orientadas a redes computacionales, con énfasis en protocolos utilizados en la Internet. Los temas incluyen: el modelo estratificado ISO, TCP/IP, establecimiento de rutas, modelo cliente-servidor, World Wide Web y "Web Services". Práctica con problemas de análisis y programación.

3. Pre/Co-requisites and other requirements:

Prerequisites: CIIC 4050 or ICOM 5007

4. Course Objectives:

Students will learn about the Fundamental protocols for network design, implementation and testing. They will also design secure network systems and analyze the performance of communication protocols.

5. Instructional Strategies:

☐conference ☐discussion ☐computation ☐laboratory
☐seminar with formal presentation ☐seminar without formal presentation ☐workshop
☐art workshop ☐practice ☐trip ☐thesis ☐special problems ☐tutoring
☐research ☐other, please specify:

6. Minimum or Required Resources Available:

Students will use the Departmental computer laboratories to complete course projects.

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
Web App Development	3
Exams	2

8. Grading System

☑ Quantifiable (letters) ☐ Not Quantifiable

9. Evaluation Strategies

	Quantity	Percent
☑ Exams	2	40%
☑ Final Exam	1	30%
☑ Short Quizzes		
☑ Oral Reports		
☑ Monographies		
☑ Portfolio		
☑ Projects	2-3	30%
☑ Journals		

Other, specify:		
TOTAL:		100%

10. Bibliography:

1. James F. Kurose and Keith W. Ross, *Computer Networking: A Top-Down Approach Featuring the Internet*, 6th ed., Pearson, 2012.
2. Larry L. Peterson and Bruce S. Davie, *Computer Networks: A Systems Approach*, 5th ed., Morgan Kaufmann, 2011.
3. Andrew S. Tanenbaum and David Wetherall, *Computer Networks*, 5th ed., Prentice Hall, 2010.
4. Thomas Robertazzi, *Basics of Computer Networking*, Springer, 2012. <http://dx.doi.org/10.1007/978-1-4614-2104-7>. [Available via Springer eBooks, UPRM General Library Databases]

11. Course Outcomes

Upon completion of this course the student will be able to:	Program Student Outcomes Impacted
1. explain the layered model in computer networks	a, b
2. analyze the structure of computer networks	a, b
3. analyze the protocols in computer networks	a, b
4. evaluate the performance of protocols in computer networks	a, b, i
5. identify the networking standards in computer networks	e, h, l
6. design, configure, and evaluate multi-hop wireless mesh networks	c, d, f, i
7. design, implement, and evaluate multi-layer protocols	c, d, f, i, j, k

12. 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 (Office #4) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

13. Academic Integrity

-The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on

his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.–

