



Expte. 03-04-00286

RESOLUCION HCD N° 94/2004

VISTO

La propuesta presentada por la Comisión Asesora de Computación de esta Facultad, ante la cual solicita se autorize que el Curso de Postgrado “Sistemas Distribuidos”, sea dictado además, como materia optativa del Plan de Estudios de la Licenciatura en Ciencias de la Computación, aprobado por Res. H. Consejo Superior N° 470/01; y

CONSIDERANDO

Que esta materia ya ha sido aprobada como Curso de Postgrado, y en virtud de los objetivos, programa y carga horaria presentados, hay alumnos interesados en cursarla como “optativa” de la Carrera;

Que es conveniente agregar en la nómina de materias optativas, aprobada por Res. H. Consejo Directivo n° 207/02, la materia y sus particularidades que se propone;

Que mediante Resolución HCS n° 122/02 se ha delegado en este Cuerpo la facultad de modificar la nómina de materias optativas del Plan de Estudios de la Licenciatura en Ciencias de la Computación;

POR ELLO

**EL HONORABLE CONSEJO DIRECTIVO DE LA
FACULTAD DE MATEMÁTICA, ASTRONOMÍA Y FÍSICA**

R E S U E L V E :

ARTÍCULO 1°: Hacer lugar a lo solicitado por la Comisión Asesora de Computación de esta Facultad y, en consecuencia, modificar la nómina de materias optativas del Plan de Estudios de la Licenciatura en Ciencias de la Computación, incorporando a la misma la materia “**Sistemas Distribuidos**” con su programa, correlativas y carga horaria, detallados en el Anexo que forma parte de la presente Resolución.

ARTÍCULO 2°: En concordancia con lo establecido en el artículo 2° de la Res. HCS n° 122/02, remítase a la Secretaría de Asuntos Académicos de la Universidad, la materia de que se trata, para su conocimiento y evaluación.

ARTÍCULO 3°: Comuníquese y archívese.

**DADA EN LA SALA DE SESIONES DEL HONORABLE CONSEJO DIRECTIVO
DE LA FACULTAD DE MATEMÁTICA, ASTRONOMÍA Y FÍSICA, A DIEZ DIAS
DEL MES DE MAYO DE DOS MIL CUATRO.**


Dr. MIGUEL A. RE
Secretario General Fa.M.A.F.


Dr. GIORGIO M. CARANTI
Decano de Fa.M.A.F.



Expte. 03-04-00286

ANEXO A RES. HCD N° 94/2004

MATERIA OPTATIVA	CORRELATIVAS			CARGA HORARIA
	PARA CURSAR		PARA RENDIR	
	REGULARIZADA	APROBADA	APROBADA	
Sistemas Distribuidos	Redes y Sistemas Distribuidos	Sistemas Operativos; Organización del Computador; Algoritmos y Estructuras de Datos II;	Redes y Sistemas Distribuidos	120 hs.

PROGRAMA

Leyes, Reglas y Experiencia previa en Sistemas Distribuidos (Laws, Rules & Experience)

Material de lectura

- Jim Gray and Prashant Shenoy. Rules of Thumb in Data Engineering. Proceedings of the 16th IEEE International Conference on Data Engineering, March 2000.
- Eric A. Brewer. Lessons from giant-scale services. IEEE Internet Computing, Vol. 5, Issue 4, August 2001.

Medios de comunicación (Communication Medium)

Material de lectura

- Robert M. Metcalfe and David R. Boggs. Ethernet: distributed packet switching for local computer networks. Communications of the ACM, Volume 19, Issue 7, 1976.
- Evan Speight, Hazim Abdel-Shafi, and John K. Bennett. Realizing the Performance Potential of the Virtual Interface Architecture. In Proceedings of the International Conference on Supercomputing, 1999.
- Mellanox Technologies. Introduction to InfiniBand.

Protocolos de comunicación (Communication Protocols)

Material de lectura

- J. H. Saltzer, D. P. Reed and D. D. Clark. End-to-end arguments in system design. In Proceedings of ACM Transactions on Computer Systems (TOCS), Volume 2, Issue 4. November 1984.
- Kenneth P. Birman, Mark Hayden, Ozgur Ozkasap, Zhen Xiao, Mihai Budiu and Yaron Minsky. Bimodal multicast. In Proceedings of ACM Transactions on Computer Systems (TOCS), Volume 17 Issue 2. May 1999.



Comunicación de grupos (Group Communication)

Material de lectura

- Kenneth P. Birman, The Process Group Approach to Reliable Distributed Computing. Communications of the ACM (CACM), 36(12):37-53, December 1993.
 - D.R. Cheriton and D. Skeen, Understanding the Limitations of Causal and Totally Ordered Multicast. In Proceedings of the 14th Symposium on Operating System Principles (SOSP '93), December 1993.
-

Algoritmos distribuidos

Material de lectura

- Leslie Lamport. Time, clocks, and the ordering of events in a distributed system. Communications of the ACM, Volume 21, Issue 7 (July 1978).
 - K. Mani Chandy and Leslie Lamport. Distributed snapshots: determining global states of distributed systems. ACM Transactions on Computer Systems (TOCS), Volume 3, Issue 1 (February 1985).
 - M. Fischer, N. A. Lynch, and M. S. Patterson. Impossibility of distributed consensus with one faulty processor. Journal of the ACM, 32(2):374-382, April 1985.
 - H. Garcia-Molina. Elections in a distributed computer system. IEEE Transactions on Computers, C-31(2): 48-59, 1982.
 - B. Lamport. The ABCDs of Paxos. Presented at Principles of Distributed Computing, 2001, as one of the papers celebrating Leslie Lamport's 60th birthday.
-

Servidores basados en clusters (Clustering)

Material de lectura

- Matt Welsh, David Culler, and Eric Brewer. SEDA: An Architecture for Well-Conditioned, Scalable Internet Services. In Proceedings of the 18th Symposium on Operating Systems Principles (SOSP-18), October 2001.
 - E. V. Carrera, S. Rao, L. Iftode, and R. Bianchini. User-Level Communication in Cluster-Based Servers. In Proceedings of the 8th IEEE International Symposium on High-Performance Computer Architecture (HPCA 8), February 2002.
 - Jeffrey S. Chase, Darrell C. Anderson, Prachi N. Thakar, Amin M. Vahdat, Ronald P. Doyle. Managing energy and server resources in hosting centers. In Proceedings of the 18th Symposium on Operating Systems Principles (SOSP-18), October 2001.
-

Tolerancia a fallas (Fault Tolerance)

Material de lectura

- Flavio Cristian. Understanding fault-tolerant distributed systems. Communications of the ACM, Volume 34, Issue 2 (February 1991).
- Rodrigo Rodrigues, Miguel Castro, Barbara Liskov. BASE: using abstraction to improve fault tolerance. In Proceedings of the 18th ACM symposium on operating systems principles, 2001.



- David E. Lowell, Subhachandra Chandra, and Peter M. Chen. Exploring Failure Transparency and the Limits of Generic Recovery. Proceedings of the 2000 Symposium on Operating Systems Design and Implementation (OSDI), October 2000.
 - B. Chandra, M. Dahlin, L. Gao, A. Nayate. End-to-end WAN Service Availability. Third Usenix Symposium on Internet Technologies and Systems (USITS01). March 2001.
-

Consistencia y replicación de datos (Consistency and Replication)

Material de lectura

- John Ousterhout. The Role of Distributed State. CMU Computer Science: A 25th Anniversary Commemorative, ACM Press Anthology Series, R. Rashid (Ed.), July 1991.
 - Haifeng Yu and Amin Vahdat. The costs and limits of availability for replicated services. In Proceedings of the 18th ACM symposium on operating systems principles, 2001.
 - D. B. Terry, K. Petersen, M. J. Spreitzer, and M. M. Theimer. The Case for Non-transparent Replication: Examples from Bayou. IEEE Data Engineering, December 1998, pages 12-20.
 - D. B. Terry, M. M. Theimer, K. Petersen, A. J. Demers, M. J. Spreitzer, and C. Hauser. Managing Update Conflicts in Bayou, a Weakly Connected Replicated Storage System. In Proceedings of the 15th Symposium on Operating Systems Principles (SOSP-15), December 1995, pages 172-183.
-

Seguridad (Security)

Material de lectura

- R. M. Needham, M. D. Schroeder. Using encryption for authentication in large networks of computers. Communications of the ACM, Volume 21, Issue 12 (December 1978).
 - B. Clifford Neuman and Theodore Ts'o. Kerberos: An Authentication Service for Computer Networks, IEEE Communications, 32(9):33-38. September 1994.
 - Steven M. Bellovin and Michael Merritt. Limitations of the Kerberos Authentication System. USENIX Conference Proceedings, pp. 253--267, Winter 1991.
 - R. L. Rivest and B. Lampson. SDSI - A Simple Distributed Security Infrastructure.
 - A. C. Snoeren, C. Partridge, L. A. Sanchez, C. E. Jones, F. Tchakountio, S. T. Kent, and W. Timothy Strayer. Hash-based IP traceback. In Proceedings of the ACM SIGCOMM'01, August, 2001.
 - K. Park and H. Lee. On the effectiveness of route-based packet filtering for distributed DoS attack prevention in power-law internets. In Proceedings of the ACM SIGCOMM'01, August, 2001
-

Redes sobre redes (Overlay Networks)

Material de lectura

- David Andersen, Hari Balakrishnan, Frans Kaashoek, Robert Morris. Resilient overlay networks. In Proceedings of the 18th ACM symposium on operating systems principles, 2001.
 - Alex C. Snoeren, Kenneth Conley, David K. Gifford. Mesh-based content routing using XML. In Proceedings of the 18th ACM symposium on operating systems principles, 2001.
-



Aplicaciones

Material de lectura

- Antony Rowstron, Peter Druschel. Storage management and caching in PAST, a large-scale, persistent peer-to-peer storage utility. In Proceedings of the 18th ACM symposium on operating systems principles, 2001.



Dr. MIGUEL A. RE
Secretario General Fa.M.A.F



Dr. GIORGIO M. CARANTI
Decano de Fa.M.A.F