

PROGRAMA DE CURSO

Código	Nombre			
CC5106	Diseño y Análisis de Algoritmos Adaptativos			
Nombre en Inglés				
Design and Analysis of Adaptive Algorithms				
SCT	Unidades Docentes	Horas de Cátedra	Horas Docencia Auxiliar	Horas de Trabajo Personal
	10	3	1.5	5.5
Requisitos			Carácter del Curso	
CC4102 /Autor			Electivo	
Resultados de Aprendizaje				
Que el alumno adquiera la capacidad de diseñar y analizar algoritmos adaptativos para diversos aplicaciones, en diversos modelos.				

Metodología Docente	Evaluación General
Cursos en la pizarra y presentaciones de alumnos	Participación en el curso (25%), presentaciones (3*25%).

Unidades Temáticas

Número	Nombre de la Unidad	Duración en Semanas	
1	Algoritmos Adaptativos	8	
Contenidos		Resultados de Aprendizajes de la Unidad	Referencias a la Bibliografía
Hanoi Tower Searching Sorting Convex Hull Delaunay Triangulation Intersection and Union Pattern Matching		Techniques of adaptive analysis and design on problems which can be solved in polynomial time	

Número	Nombre de la Unidad	Duración en Semanas	
2	Otras aplicaciones del principio	7	
Contenidos		Resultados de Aprendizajes de la Unidad	Referencias a la Bibliografía
Competitive Analysis Collaborative Analysis Parameterized Complexity Smooth Analysis Instance Optimality		More complex applications of the same principle that the size of an instance is not necessarily the best measure of its difficulty.	

Bibliografía

S. Angelopoulos, R. Dorriv, and A. López-Ortiz.
On the separation and equivalence of paging strategies.
In SODA '07: Proceedings of the eighteenth annual ACM-SIAM
symposium on Discrete algorithms , pages 229--237, Philadelphia, PA, USA,
2007. Society for Industrial and Applied Mathematics.

J. Barbay, A. Golynski, J. I. Munro, and S. S. Rao.
Adaptive searching in succinctly encoded binary relations and
tree-structured documents.
ELSEVIER Theoretical Computer Science (TCS) , October 2007.

J. Barbay and C. Kenyon.
Alternation and redundancy analysis of the intersection problem.
ACM Transactions on Algorithms (TALG) , May 2006.

A. Borodin and R. El-Yaniv.
Online Computation and Competitive Analysis .
Cambridge University Press, 1998.

T. M. Chan.
Output-sensitive results on convex hulls, extreme points, and related
problems.
Discrete & Computational Geometry , 16:369--387, 1996.

C. Cool and D. Kim.
Best sorting algorithm for nearly sorted lists.
Communication of ACM , 23:620--624, 1980.

E. D. Demaine, A. López-Ortiz, and J. I. Munro.
Adaptive set intersections, unions, and differences.
In Proceedings of the 11th ACM-SIAM Symposium on Discrete
Algorithms (SODA) , pages 743--752, 2000.

V. Estivill-Castro and D. Wood.
A survey of adaptive sorting algorithms.
ACM Computing Surveys , 24(4):441--476, 1992.

R. Fagin, A. Lotem, and M. Naor.
Optimal aggregation algorithms for middleware.
In Symposium on Principles of Database Systems , 2001.

J. Flum and M. Grohe.
Parameterized Complexity Theory (Texts in Theoretical Computer
Science. An EATCS Series) .
Springer-Verlag New York, Inc., Secaucus, NJ, USA, 2006.

D. G. Kirkpatrick and R. Seidel.
The ultimate planar convex hull algorithm?
SIAM J. Comput. , 1986.
15(1):287--299.

H. Mannila.
Measures of presortedness and optimal sorting algorithms.
In IEEE Trans. Comput. , volume 34, pages 318--325, 1985.

D. Marx.
Parameterized complexity of constraint satisfaction problems.
In Proceedings of 19th Annual IEEE Conference on Computational
Complexity , pages 139--149, 2004.

O. Petersson and A. Moffat.
A framework for adaptive sorting.
Discrete Applied Mathematics , 59:153--179, 1995.

Vigencia desde:	Otoño 2009
Elaborado por:	Jeremy Barbay