



# Izmir Institute of Technology

## MBG 517 – Algorithms in Bioinformatics

<b>Instructor</b>	Jens Allmer E-Mail: <a href="mailto:mbg517@allmer.de">mbg517@allmer.de</a> Web: <a href="http://mbg517.allmer.de">http://mbg517.allmer.de</a>	
<b>Text Books</b>	NC Jones and P Pevzner “An Introduction to Bioinformatics Algorithms”, 2004. P. Pevzner “Computational Molecular Biology: An Algorithmic Approach”, 2000. T.H. Cormen, E. Charles, “Introduction to Algorithms”, 2001.	
<b>Description</b>	This course first introduces algorithms on a high level and then quickly goes into the details of different algorithms (see outline below). For each algorithm biological applications and implementaions will be discussed. In addition to learning about algorithms and their implementation students will learn to research and present their findings.	
<b>Outline</b>	16.02.10	Introduction to algorithms
	23.02.10	Exhaustive Search
	02.03.10	Greedy Algorithms
	09.03.10	Dynamic Prgramming
	16.03.10	Divide and conquer algorithms
	23.03.10	Graphs
	30.03.10	Graphs and pathfinding algorithms
	06.04.10	Combinatorial Pattern matching
	13.04.10	Clustering and trees
	20.04.10	Hidden Markov models
	27.04.10	Randomized processes
	04.05.10	Genetic Algorithm
	11.05.10	Antcolony optimization or Swarm optimization
	18.05.10	Review and Project Presentations
<b>GRADING</b>	Participation	20
	Project	40
	Presentations	40
	Attendance	Is required by YÖK and will be enforced. Your grade will be influenced by attendance via participation you may also fail due to low attendance (<70%)
<b>Office Hours</b>	Wednesdays	14:00 – 16:00 Room: 230