

Fall 2017 ICOM/CIIC/INSO Advanced Undergrad & Graduate Courses

ICOM 6025/CIIC 4019. High Performance Computing

Pre-requisites: CIIC 4020 or ICOM 4035

LW 6:00- 7:15 pm

Dr. Wilson Rivera

Study of the fundamentals concepts associate with the performance of a computing system. Discussion of techniques for the reduction of operations with the aim of minimizing the response time of a system to problems whose solution poses a high demand of computational resources. Study of parallelization, and concurrency strategies, and practical experiences with the use of systems and tools implementing them.

CIIC 5995/CIIC 8995. Bioinformatics

Pre-requisites: CIIC 4025

MJ 6:30-7:45 pm

Dr. Jaime Seguel

Study of algorithms for processing genomic and proteomic data. Includes heuristic, randomized and non-heuristic algorithmic solutions for sequence comparison, gene finding and gene expression state determination problems, among others. Algorithmic design principles and its impacts on time and space complexity and the quality of results are emphasized.

ICOM 5016 / CIIC 4060. Database Systems

Pre-requisites: CIIC 4020 o ICOM 4035. Co-requisite: CIIC 4050 o ICOM 5007

MJ 5:00-6:15 pm

Dr. Manuel Rodriguez

Study of database system architectures, design and implementation of database applications, conceptual and representational models, SQL and the relational model, functional dependencies and normalization, transaction processing.

ICOM 5026 / CIIC 4070. Automata and Formal Languages

Pre-requisites: CIIC 4025 or ICOM 4038.

LW 4:30-5:45 pm

Dr. Jaime Seguel

Study of theoretical computational models, languages, and machines. Introduction to the theory of intractable and un-decidable problems. Topics include: finite automata, regular languages, context-free languages, pushdown automata, Turing machine, halting problem, undecidability, and intractable problems.

INSO 4116. Software Design

Pre-requisites: INSO 4115

LW 4:30-5:45 pm

Dr. Marko Schutz

Fundamental principles and development of skills required for the effective design of complex software systems. Topics include: formal design methods, design specification standards, design patterns, design validation, and design metrics. Use of computer-aided software engineering (CASE) tools.