

**UPR Mayagüez – Department of Computer Science and Engineering**  
**Oferta de Cursos Avanzados Electivos para los Programas ICOM/CIIC/INSO**  
Algunos cursos están disponibles tanto para estudiantes graduados como para subgraduados.

**CIIC 59995-116/CIIC 8995-116 Big Data Analytics**

**MJ 5:00- 6:15 pm**

**Dr. Manuel Rodriguez**

**Pre-requisites: [CIIC 4060 or ICOM 5016 (Database Systems)] and ININ 4010 (Probability and Statistics for Engineers) or authorization of department chair.**

Introduction to the principles of big data systems, and analytics techniques that process large amounts of data by means of clusters/ clouds and parallel computing techniques. Topics include: map-reduce systems, large-scale cluster-based file systems, query processing with map reduce, memory-resilient datasets, data warehousing, data mining, machine learning fundamentals, stream analytics, graph analytics and reliability.

**CIIC 59995-126/CIIC 8995-126 Virtual Machines**

**MJ 6:30-7:45 pm**

**Dr. Emmanuel Arzuaga**

**Pre-requisites: Knowledge equivalent to an undergraduate level course in Operating Systems**

This course will cover concepts related to the design and implementation of virtual machine monitors as well other recent advances in virtualization. The course will cover traditional virtualization techniques such as trap-and- emulate, binary translation, shadow page tables and device emulation as well as to survey the classic papers and other recent.

**CIIC 5995-096 / CIIC 8995-096. Web App Development**

**MJ 3:30-4:45 pm**

**Dr. Amir Chinaei**

**Pre-requisites: ICOM4035 or CIIC4020**

Operational concepts of the internet and web development technologies, such as http, static client content, dynamic client content, dynamically served content, multi-tiered architectures, web development processes, and security challenges. HTML, CSS, Javascript, JQuery, REST, Node.js are among tools to be used.

**ICOM 5026 / CIIC 4070. Computer Networks**

**MJ 2:00-3:15 pm**

**Dr. Kejie Lu**

**Pre-requisites: ICOM5007 or CIIC4050**

Most relevant aspects of computer communication including the OSI and Internet layering models and networking protocols at Sub network, Network, Transport, and Application Layers. The course will also cover different Computer Networks media and standards as well as the software, hardware, and terminology associated with Data Communications.

**ICOM5015 / CIIC 5015. Artificial Intelligence**

**LWV 1:30-2:20 pm**

**Dr. Fernando Vega**

**Pre-requisites: ICOM4035**

An introduction to the field of Artificial Intelligence: LISP language, search techniques, games, vision, representation of knowledge, inference and process of proving theorems, natural language understanding.