



**NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF SCIENCES
COMPUTER SCIENCE PROGRAM**

CC302 – OBJECT ORIENTED DISTRIBUTED PARALLEL LANGUAGE

I. INFORMACIÓN GENERAL

CODE	: CC302 Object Oriented Distributed Parallel Language
SEMESTER	: 6
CREDITS	: 4
HOURS PER WEEK	: 6 (Theory – Laboratory)
PREREQUISITES	: CC201 Introduction to Object-Oriented Programming CC301 Parallel Algorithms
CONDITION	: Mandatory

II. COURSE DESCRIPTION

Demonstrate that there are object-oriented languages that are distributed, parallelized, and that X10 devices can access with Java (X10).

III. LEARNING UNITS

1. Introduction
2. X10 – Overview
3. Lexical Structure
4. Types
5. Variables
6. Objects
7. Packages and names' rules
8. Name conventions
9. Interfaces. Interfaces with properties
10. Classes
11. Declaration of variables

12. Statements

13. Expressions

14. Places

15. Activities

16. Clock. Clock operations

17. Arrays

18. Plugin compilers

19. Linking with native code

IV. BIBLIOGRAPHY

- David Bacon. Kava: A Java dialect with a uniform object model for lightweight classes. *Concurrency – Practice and Experience*, 15:185–206, 2003.
- Joseph A. Bank, Barbara Liskov, and Andrew C. Myers. Parameterized types and Java. In *Proceedings of the 24th Annual ACM Symposium on Principles of Programming Languages (POPL'97)*, pages 132–145, 1997.
- <http://dist.codehaus.org/x10/documentation/languagespec/x10-170.pdf>
- J. Gosling, W. Joy, G. Steele, and G. Bracha. *The Java Language Specification*. Addison Wesley, 2000.
- Jose E. Moreira, Samuel P. Midkiff, Manish Gupta, Pedro V. Artigas, Marc Snir, and Richard D. Lawrence. Java programming for high-performance numerical computing. *IBM Systems Journal*, 39(1):21–, 2000.
- A. Skjellum, E. Lusk, and W. Gropp. *Using MPI: Portable Parallel Programming with the Message Passing Interface*. MIT Press, 1999.