

Academic Year/course: 2022/23

30230 - Language Processors

Syllabus Information

Academic Year: 2022/23

Subject: 30230 - Language Processors

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 439 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 3

Semester: Second semester

Subject Type:

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. The learning process designed for this subject is based on the following elements:

- Lectures with the contents of the subject.
- The student's personal study and autonomous work.
- Working on the solutions of theoretical and practical problems.
- The development of specific and guided laboratory work by students.

4.2. Learning tasks

The program offered to the student in order to help her to achieve the expected results include the following learning activities:

- master classes where the teacher will explain the subject concepts
- problem solving classes where problems related to the application of the concepts and techniques will be discussed
- laboratory sessions students will have to apply the studied concepts and techniques for developing a compiler for a given programming language

4.3. Syllabus

Lectures and problem classes will focus on the study of the following topics:

- Topic 1: Introduction. Language processors.
- Topic 2: Lexical Analysis. Automata and regular expressions. Implementation of a tokenizer.
- Topic 3: Context-free grammars. Grammar transformations. Parsing techniques.
- Topic 4: Semantic analysis. Symbol table. Implementation of the semantic analysis.

- Topic 5: Runtime Environments.
- Topic 6: Code generation and optimisation.

Practical laboratory sessions will cover the construction of a compiler for a simple language from the beginning, completing the phases of lexical, syntactic and semantic analysis, as well as code generation.

4.4. Course planning and calendar

The course schedule and timetable will be defined by the centre in the academic calendar for the corresponding academic year.

Student's work

- Type 1 activity (lecture classes): 30 hours
- Type 3 activity (practical classes): 24 hours
- Theoretical/practical assessment activity: 3 hours
- Practical assessment activity: 3 hours
- Student work: 90 hours (approx.)

The detailed calendar of activities will be established on the basis of the calendar approved by the University for the corresponding academic year. Dates for exams and assignments will be announced well in advance during classes and on the course page (Moodle).

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30230&Identificador=14694>