

Course title: Programming principles

Course code	Course status	Semester	Number of ECTS credits	Lecture hours
132002079	Mandatory	II	7	3+2

Study program:

Basic applied studies, ELECTRICAL ENGINEERING, study program: Computer engineering (studies last for 6 semesters, 180 ECTS credits).

Prerequisites:

No prerequisites required.

Course aims:

Introduction to basic algorithm steps, elementary and complex data types, algorithm based problem solving, schematic and pseudocode algorithm representation, basic program modules (main program, procedures, script files, classes) etc.

Teacher(s) and assistant(s) first and last names:

Ph.D. Igor Đurović – teacher
Mr Slobodan Đukanović – assistant
Mr Đuro Stojanović – assistant

Studying method:

Lectures, exercises, individual work on practical tasks, consultations.

Course synopsis:

Preliminary weeks	Preparation and semester enrolment.
I week	Introduction. Development of program languages and algorithms.
II week	Elementary data types.
III week	Operations with elementary data types.
IV week	Basic algorithm steps. Examples of typical algorithms.
V week	Algorithm complexity. Arrays, matrices and strings.
VI week	First test
VII week	Free week
VIII week	Searching and sorting algorithms. Functions and procedures.
IX week	Procedure types.
X week	Structure data types and corresponding algorithms.
XI week	Linked data types (lists).
XII week	Second test
XIII week	Graphs. Trees and tree types. Binary tree algorithms.
XIV week	Object-oriented programming - class.
XV week	Inheritance, friends and operator overloading.
XVI week	Final exam
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

STUDENT WORKLOAD

<u>per week</u>	<u>per semester</u>
Working hours: 7 credits x 40/30 = 9 hours and 20 min.	Teaching and the final exam: (9.33 hours) x 16 = 149 hours and 20 minutes.
Working hours structure: 3 hours for teaching 2 hours for laboratory exercises 4 hours and 20 minutes for individual work, including consultations.	Necessary preparation (before semester): 2 x (9.33 hours) = 18 hours and 40 minutes. Total work hours for the course: 7 x 30 hours = 210 hours Additional hours for preparing correction of the final exam, including the exam taking: up to 42 hours. Work hours structure: 149 hours and 20 minutes (lectures) + 18 hours and 40 minutes (preparation) + 42 hours (additional work)

Lessons attendance is mandatory for students, as well as doing home exercises and both tests.

Literature: I. Đurović: „Principi programiranja“ - handouts.

The forms of knowledge testing and grading:

- Home exercises carry 5x1 points.
- Each test carries 22.5 points (45 points total).
- Final exam carries 50 points.

Student gets the passing grade by collecting 50 points at least (subject to correction).

Special remarks for the course: Lessons are organized in one group, or if needed, in several groups. Exercises are organized in two groups.

Teacher(s) who provided the information: Ph.D. Igor Đurović

Remark: Additional information at www.etfprog.cg.ac.yu