

Programming in C (E741058)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 3.0 Study time 90 h Contact hrs 30.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	online lecture	15.0 h
			seminar: practical PC room classes	9.0 h
			online seminar: practical PC room classes	6.0 h

Lecturers in academic year 2020-2021

Naessens, Helga	TW05	lecturer-in-charge
Van Den Breen, Wim	TW05	co-lecturer

Offered in the following programmes in 2020-2021

	crdts	offering
Bachelor of Science in Engineering Technology (main subject Electromechanical Engineering Technology)	3	A
Linking Course Master of Science in Electrical Engineering Technology (main subject Automation)	3	A
Linking Course Master of Science in Electrical Engineering Technology (main subject Electrical Engineering)	3	A

Teaching languages

Dutch

Keywords

Programming language, C, Pointers, Computer Science (P170), Informatics (P175), Computer Technology (T120)

Position of the course

An in-depth course in C for those already familiar with some programming language, like for example Java or Python.

Contents

The section Programming in C includes the following topics:

- Basic concepts: variables and basic data types, operators, control structures, input/output, functions, arrays
- Pointers: basic concepts, call by reference, pointers and arrays, pointer to const, operations on pointers, pointer as result of a function, constant pointer, function pointers, C-strings
- Structs
- Dynamic memory management
- Linked lists
- Bit fiddling

Initial competences

A good experience with some programming language: methods, sequence, selection, iteration, collections, ...

Final competences

- 1 To be able to independently implement, test and execute a computer program in C.
- 2 To be able to transform a design into a working computer program in C.
- 3 To be able to analyze and to structure a problem and to translate it into a computer program in C.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar: practical PC room classes, online lecture, online seminar: practical PC room classes

Extra information on the teaching methods

During the lectures (15 h) the theory is explained step by step, partly based on examples.
During the exercise sessions (15 h) the student works independently on a PC.

Learning materials and price

Slides, examples and exercises with solutions are provided on the electronic learning environment.
Some books about the course topics are available in the library.

References

- Head First C, David Griffiths & Dawn Griffiths, ISBN 978-1-4493-9991-7
- Beginning C, 5th Edition, Ivor Horton, ISBN 978-1-4302-4881-1
- C in a Nutshell, Peter Prinz & Tony Crawford, ISBN 978-0-596-00697-6
- The C Programming Language, second edition, Kernighan & Ritchie, ISBN 978-0-131-10362-7
- Programming in C, 4/E, Stephen G. Kochan, ISBN 978-0-3217-7641-9
- The C Programming Language, B.W. Kernighan, D.M. Ritchie, ISBN 978-0-1311-0362-7

Course content-related study coaching

The student can always make an appointment with the teacher.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions

Examination methods in case of permanent evaluation

Skills test

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

PE: the exam is a practical exam, consisting mainly of exercises, possibly complemented by a few theoretical questions.
NPE: participation in the test is not mandatory.

Calculation of the examination mark

Written examination: 100%

If the student participated to the test, he can decide for himself whether or not to use the obtained points for a particular question of the examination. If the student does not solve the exam question, the score obtained for the (specific question of the) test will be transferred for this question.

If the question is solved, the score of the (specific question of the) test is not used (the points for (that question of) the test are therefore not taken into account).