

Object oriented programming in C# (E741060)

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 4.0 Study time 120 h Contact hrs 42.0 h

Course offerings and teaching methods in academic year 2020-2021

Offering	Language	Location	Teaching Method	Hours
A (semester 1)	Dutch	Gent	practicum	24.0 h
			lecture	18.0 h

Lecturers in academic year 2020-2021

Ongenaë, Veerle TW05 lecturer-in-charge

Offered in the following programmes in 2020-2021

Programme	crdts	offering
Bachelor of Science in Engineering Technology (main subject Electromechanical Engineering Technology)	4	A

Teaching languages

Dutch

Keywords

Object oriented programming, C#, programming language, Computer Science (P170), Informatics (P175), Computer Technology (T120).

Position of the course

This course learns the student the principles of object oriented programming in C#. Furthermore, this course has a broad educational value: it gives insight into abstract structures and processes, it develops analytical skills, the students learn to think modularly, they learn to solve problems themselves and to formulate appropriate solutions. The acquired theoretical knowledge and skills are used in many other areas (design, planning, optimization, ...)
This course is a fundamental course for other courses, like web technologies.

Contents

Among other things following topics are covered:

- Basic principles of structured programming: variables, sequences, selection, iteration.
- Basic principles of object oriented programming: classes, objects, methods, constructors, inheritance, overriding, overloading, polymorphism, dynamic binding.
- Exception handling.
- Simple console applications and graphical applications in WPF.
- Basic algorithms: searching, sorting, manipulating arrays, ...
- Use of collections and data structures.

Initial competences

A good experience with some programming language (like for example Python): methods, sequence, selection, iteration, collections, ...

Final competences

- 1 Being able to analyze, structure and translate a problem into a computer program in C#.
- 2 Knowing and being able to apply the basic concepts of object oriented programming in C# (types, variables, iteration and selection, classes, objects, methods, constructors, inheritance, overriding, polymorphism, dynamic binding, exception handling, collections and data structures, ...).
- 3 Being able to program a simple GUI in WPF.

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

Lecture, practicum

Extra information on the teaching methods

During the lectures (18 h) the theory is explained step by step, partly based on examples.

During the exercise sessions (24 h, attendance required) 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.

Software: Visual Studio

References

- Head First C#, Andrew Stellman & Jennifer Greene, ISBN 978-1-4493-4350-7
- Microsoft Visual C# Step by Step, John Sharp, ISBN 978-1-5093-0104-1
- Essential C# 7.0, M. Michaelis, ISBN 978-1-5093-0358-8
- C# 7.0 in a Nutshell: The Definitive Reference, Joseph & Ben Albahari, ISBN 978-1-4919-8765-0

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, skills test

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

Written examination, skills test

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

The exam is a practical exam, consisting mainly of computer exercises, possibly complemented by a few theoretical questions.

For the lab section, there are one or more skills tests on PC.

Calculation of the examination mark

PE (written exam): 60%

NPE (skills test(s)): 40%

During the second exam chance the points of the NPE disappear and only the points obtained on the exam count.