Object Oriented Programming (E620500)

Course size   *(nominal values; actual values may depend on programme)*

    Credits 3.0   **Study time 90 h**

Course offerings and teaching methods in academic year 2023-2024

A (semester 1)	Dutch	Kortrijk	seminar
			lecture

Lecturers in academic year 2023-2024

Ongenae, Veerle	TWO5	lecturer-in-charge

Offered in the following programmes in 2023-2024	crdts	offering
Bachelor of Science in Engineering Technology(main subject Machine and Production Automation)	3	A
Master of Science in Industrial Design Engineering Technology	3	A
Linking Course Master of Science in Machine and Production Automation Engineering Technology	3	A

Teaching languages

Dutch

Keywords

Software, programming, OOP, C#, .NET, software layers, informatics

Position of the course

The mail goal of this course is learning to program in an object oriented way. The program language is C#. Moreover, the course has a general educating value: it provides insight in abstract structures and processes, the development of analytics, it helps with the modular thinking, ... This theoretical knowledge and the new competences are useful for other domains. The course is the base for other software oriented courses.

Contents

- .NET Framework & Visual Studio
- Memory
  - Stack & Heap
  - Value types vs. reference types
- Basic principles on object oriented programming:
  - classes
  - objects
  - properties, methods and events
  - constructors and finalizers
  - overloading
  - Inheritance
  - overriding
  - polymorphism
  - dynamic binding
  - interfaces
- Software layers (GUI, BLL, DAL)
- Exception handling
- IO

Initial competences

The course unit informatics has to be followed or the intended competencies has to be achieved in one way or another.

Final competences

1 Knowing the basic concepts on object oriented programming in C# .NET and be able to use them.
2 Analyse and structure a problem and translate everything into an (layered) OO software concept/ design
3 Creating, testing and debugging a C# .NET program based on a (layered) OO software concept/ design

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, Lecture

Extra information on the teaching methods

The theoretical concepts are explained step by step with examples during the lectures. In the seminars, the student works autonomous on a computer.

Learning materials and price

• Presentations (Dutch), free pdf version on the electronic learning platform
• 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

• Interactive support via the electronic learning environment and mail
• Personal feedback by appointment

Assessment moments

end-of-term and continuous assessment

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

Skills test, Written assessment

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

Skills test, Written assessment

Examination methods in case of permanent assessment

Skills test

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

Periodic evaluation
The examination is practical, based on computer exercises with maybe some theoretical questions

Permanent evaluation
During the seminars, there is one or more skill test

Calculation of the examination mark

Final score (/20) = C1 x P1 + C2 x P2
Here are Cx the weighting coefficients and Px the points (/20):
P1: points theory (periodic evaluation)
P2: points seminar (permanent evaluation)
C1 = 60%, C2 = 40%
During the second exam chance the points of the NPE disappear and only the points obtained on the exam count.