GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2026-2027

Computer Use (C000939)

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

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2026-2027

A (semester 1)	Dutch	Gent	seminar
			lecture

Lecturers in academic year 2026-2027

Dawyndt, Peter	WE02	lecturer-in-charge

Offered in the following programmes in 2026-2027	**crdts**	**offering**
Bachelor of Science in Computer Science	6	A

Teaching languages

Dutch

Keywords

user aspects, operating systems, computer networks, web technology, unix command line, git, shell scripting

Position of the course

A computer scientist needs to be an all-rounder, but first and foremost one expects that he or she is no slouch at dealing with all sorts of tools that are available on most modern computer systems: databases, office applications, operating systems, computer networks and internet technology. This requires an in-depth knowledge and loads of experience with the user aspects of different software components available on a computer system. This course on Computer Use allows you to acquire this essential knowledge and experience. In addition, it aims at further exploiting the acquired skills to take advantage of the interaction between software tools for automating repetitive and complex tasks.

Contents

This course discusses a broad range of user aspects related to the different software tools that are built into most modern computer systems. Theoretical concepts are immediately brought into practice, by making use of the Unix-based family of operating systems. The following topics are covered in detail:

- working interactively with the shell command line
- interactive text editing
- file management
- IO-redirection en pipes
- consulting technical documentation
- files and filters
- programmable filters: sed
- shell flow-of-control
- process management
- bash shell scripting
- protections and privileges
- computer networks
- X Window System
- advanced text editing using regular expressions
- management of software projects: git and github

Initial competences

No prior knowledge or experience required. Sound interest in computer systems and familiarity with basic skills for working with a computer are recommended.

Final competences

1 Interact with the operating system and other software applications through the command line.
2 Automate complex and repetitive tasks that use the operating system and andere software applications by writing shell scripts.
3 Work interactively and non-interactively with file systems, text editors, operating systems, computer networks and the Internet.
4 Manage different versions of a software project using git and github.

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, Independent work

Extra information on the teaching methods

Electronic learning environment Ufora is used to encourage individual contributions of the students and to disseminate background material and pointers to alternative scripting languages. Assignments are distributed via Dodona (dodona.be), can be worked out on the UGent HPC environment and must be submitted to Dodona (dodona.be).

Study material

Type: Slides

Name: Slides shown during the lectures.
Indicative price: Free or paid by faculty
Optional: no
Language : Dutch
Available on Ufora : Yes
Online Available : Yes
Available in the Library : No
Available through Student Association : No

References

E. Nemeth, G. Snyder, T.R. Hein, B. Whaley UNIX and Linux System Administration Handbook, 2010.S.M. Sarwar, R. Koretsky,
S.A. Sarwar, UNIX the textbook, second edition, Pearson Education, 2005.

Course content-related study coaching

Through a combination of classroom lectures and computer seminars, the student gains insight in the user aspects of modern computer systems. He or she is stimulated to practice these newly learned skills by means of a series of given exercises. Solutions to exercises and tasks are evaluated during computer seminars. Consultation with lecturer or one of his assistants by email appointment gives the possibility of additional explication on an individual basis. Interactive coaching (among students and between students and the lecturer) is encouraged by making use of the electronic learning environment Ufora.

Assessment moments

end-of-term and continuous assessment

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

Skills test

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

Skills test

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

In computing the final score we take into account both the permanent evaluations (20%, 4/20) and the periodic evaluation (80%, 16/20). The permanent evaluation has two components that both influence the score for the permanent evaluation.

For the first part of the permanent evaluation, on a weekly basis the students get a series of exercises they can work on during the guided practical sessions and they need to complete further on their own. In each series of exercises some of the exercises are marked as mandatory exercises. These are the exercises for which the students have to submit solutions that are taken into account for determining the result of the permanent evaluation. The other exercises are optional and can be used to further practice the newly acquired skills. Some of the exercises are marked with "exam" to indicate that these exercises have been used as exam assignments in the past. Additional exam assignments are available on Ufora, together with an exam contract that describes the rules that govern the exam.

For the second part of the permanent evaluation, we organise two evaluation sessions during the hands-on sessions that follow after five exercise series. During these evaluations, students have to solve some new assignments within the time frame of two hours. These exercises are in line with the mandatory exercises the students had to solve during the hands-on sessions. The submitted solutions for the evaluation exercises are manually evaluated by the lecturer or the teaching assistants and scored based on both correctness and the overall quality of the solution. The level of difficulty of the evaluation exercises corresponds to the the level of the assignments that need to be solved during the periodic evaluation (exam). In addition, these evaluation sessions follow the same procedure that is also used during the periodic evaluations, so that students can use this experience to adjust their approach towards the exam.

The score for the permanent evaluation is determined using the formula s * c / a, where s is the score a student has obtains based on his submitted solutions for the evaluation exercises (expressed as a score out of 20), c is the number of mandatory exerices for which at least one correct solutions has been submitted before the weekly deadlines, and a is the total number of mandatory exercises. A student that for example has obtained a score of 16/20 for his evaluation exercises and that has submitted correct solutions for all 30 mandatory exercises before the weekly deadlines, obtains a score of 16 * 30/30 = 16 out of 20 for the evaluation series. If that student still had obtained a score of 16/20 for his evaluation exercises, but only submitted 18/30 correct solutions for the mandatory exercises before the weekly deadlines, he sees his score for the evaluation series reduced to 16 * 18/30 = 9.6 out of 20.

Students will receive an email with their score for the evaluation series as soon as possible after each evaluation session. During the next hands-on session, students can collect their submitted solutions that will have been annotated with feedback that indicates where they can improve their code. They can use this feedback in solving other exercises.

It is not possible to retake the permanent evaluation during the second examination period. To compute the score for the second examination period, we compute two scores. One score takes into account the score for the permanent evaluations (with weight 20%, as was done during the first examination period). The other score ignores the score obtains for the permanent evaluations, and is only based on the score for the periodic evaluation. The final score for the second examination period is the maximum of these two scores.

During the periodic evaluation (exam) students are given four hours to solve some given assignments. These exercises are in line with the mandatory exercises the students had to solve during the hands-on sessions and the evaluation assignments. To determine the score for the periodic solution, the submitted

solutions are manually evaluated by the lecturer or the teaching assistants and scored based on both correctness and the overall quality of the solution.

Calculation of the examination mark

In computing the final score we take into account both the permanent evaluations (20%, 4/20) and the periodic evaluation (80%, 16/20).

It is not possible to retake the permanent evaluation during the second examination period. To compute the score for the second examination period, we compute two scores. One score takes into account the score for the permanent evaluations (with weight 20%, as was done during the first examination period). The other score ignores the score obtains for the permanent evaluations, and is only based on the score for the periodic evaluation. The final score for the second examination period is the maximum of these two scores.