Master of Computer Science

Pre-screening form

This pre-screening is a preliminary appraisal of the suitability of your academic background and is one of the decisive components in the screening of your application file. Fill out your pre-screening form meticulously. Please make sure to convert into PDF and rename this document to "lastname_firstname.pdf" and upload your pre-screening application along with all the required supporting documents to your application file in Mobility Online.

1 Personal Data

All fields of this section have to be filled out.

The form of your name should correspond exactly with your university degree and your application details in Mobility Online.

Family name: Insert text here

First name(s): Insert text here

Date of Birth: dd/mm/yyyy date

2 Academic Data

List as many as relevant to this application and copy the table as often as necessary.

Only Higher Education is requested, start with highest/most advanced degree.

Institute/University: Insert text here

Address: Insert text here

E-mail of Faculty contact person Insert text here

URL programme of degree(s) relevant to this application: Insert text here

Diploma/Degree : Insert text here

From: dd/mm/yyyy date

Until: dd/mm/yyyy date

Final Grade: Insert text here

Grade conversion scheme into %: Insert text here

Extra info: Insert text here

(Copy this table as often as necessary.)

3 Professional and practical experience

List as many as appropriate and copy table as often as necessary.

Employer: Insert text here

Function: title Insert text here

Type of work Insert text here

Duration from dd/mm/yyy date until dd/mm/yyyy date

4 Scientific background requirements common to all majors

To be eligible for the programme Master of Computer Science, a student should have a strong scientific background in order to be able to pass all the courses.
When the grades you obtained are represented by letters or other then provide us with a conversion scheme into percentage (see above: academic data). Usually you can find them on the Transcript of Records.
An indicative set of concepts/disciplines that need to be understood, whatever your choice of major, are outlined here. This set is made as an equivalent of competences of a local Bachelor student. Try to prove you have the required background by filling out the tables (see example below). Provide us with the names of the courses from your own curriculum with a content equivalent to the requirements. This can be more than one course!
You may have acquired some of these skills on your own, outside a course. If this is the case, mention "self study" as the Course Name.

4.1 Computer skills (mostly non-scientific)

- UNIX-based operating system (Ubuntu or similar): file operations, installing software and ibraries, shell scripting, regular expressions, network configuration proficiency;
- familiarity with at least one integrated development environment (e.g. Eclipse, Code: Blocks, netbeans);
- usage of compiler, linker, debugger, profiler etc. in at least on environment;
- usage of Version Control Systems (SVN, Mercurial, Git or similar);
- familiarity with at least one word processing system. Experience with LaTeX is recommended.

(Copy table as often as necessary.)

Course name: Insert text here
Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here
Keywords: Insert text here
Course description: Insert text here

4.2 Programming and software development

- Proficiency in at least one dynamically typed object oriented language (e.g. Python, Ruby);
- proficiency in at least one statically typed object oriented language (e.g. C++, Java);
- thorough understanding of object-oriented constructs (classes, inheritance, polymorphism); this proficiency is crucial – demonstrate clearly that you master object-orientation!
- thorough understanding of programming constructs (generics, exception handling, threads);
- strong programming skills including use of appropriate language idioms, design patterns, etc;
- *Copy table as often as necessary.)*

Course name: Insert text here
Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here
Keywords: Insert text here
Course description: Insert text here

4.3 Mathematics

- Discrete mathematics (set theory, number theory, logic, proof by induction);
- calculus (summation, integrals, boundedness, injection/surjection/bijection, continuity, limits);
- elementary statistics (mean, average, probability, distributions);
- algebra (vector, matrix, floating point, least squares,...)
- *Copy table as often as necessary.)*

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

4.4 Algorithms, Data Structures and Theoretical Concepts

- Binary trees and search trees, tables, priority queues, balanced search trees;
- graph searching, flow networks;
- Turing machines, finite state machines;
- time and space complexity;
- context free grammars;
- regular expressions;
- *Copy table as often as necessary.)*

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

4.5 Databases and XML

- Relational database model;
- XML (DOM or SAX parser, XSLT)
- *Copy table as often as necessary.)*

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

4.6 Networks

- ISO/OSI layered reference model;
- basic knowledge about communication networks;
- basic knowledge about distributed systems;
- Client Server Model;
- using wire shark/tcpdump;
- reading technical documentation (RFCs, standards,...)
- *Copy table as often as necessary.)*

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

5 Background requirements specific to your major of interest

Obviously, your background needs to be stronger with respect to the major you choose. In this section you'll find the requirements specific to each of the three majors. You need to fill out the box only for the major you're applying for. The remarks of the previous section on how to fill out the boxes apply here as well. List all the courses filled out in the tables above and give their descriptions. Please, highlight in a light color the keywords of the course. Applications lacking appropriate descriptions will not be processed.

Computer Networks

- Physical layer: signals and their representation, modulation and coding, multiplexing;
- Link layer: Fault detection (CRC), flow control (stop and wait protocol, sliding window protocol, (ARQ protocols), ALOHA, Ethernet, IEEE 802.11, ARP;
- Network layer: IPv4, IPv6, routing;
- Transport layer: TCP, UDP;
- knowledge about communication networks (IP networks, GSM, WLAN, DSL, HFC, …);
- distributed middleware;
- distributed communication: remote procedure calls, message exchange;
- fault tolerance: distributed failure detection, masking and recovery;
- clock synchronization: physical and logical clock synchronization (vector clocks, Lamport clocks);
- replication: consistency models, replica management;
- coordination: distributed mutual exclusion and election mechanisms
- *Copy table as often as necessary.)*

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

Data Science and Artificial intelligence

- SQL, relational algebra;
- functional dependencies, normal forms;
- transactions (two-phase commit);
- data mining (classification, clustering, frequent pattern mining)

Copy table as often as necessary.)

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

Software Engineering

- Unit testing, regression testing;
- familiarity with structured development processes, analysis, architecture and design of software;
- Object Oriented Design Patterns (factory, singleton, adapter/wrapper, bridge, façade, proxy, command, observer, visitor, iterator, state, model-view-controller);
- Unified Modeling Language (class diagram, object diagram, activity diagram, state machine diagram, sequence diagram)

Copy table as often as necessary.)

Course name: Insert text here

Year: Insert text here Semester: Insert text here Credits: Insert text here Grade: Insert text here

Keywords: Insert text here

Course description: Insert text here

6 Declaration by the applicant

I hereby certify that the information provided in this form is accurate and complete. I understand that inaccurate, incomplete or illegible information may affect my application. Misrepresentation of this information is ground for admission denial or even expulsion from the University of Antwerp.

Date: dd/mm/yyyy date

Place: Insert text here

Signature:

X _____

Privacy

The University of Antwerp Faculty of Science is responsible for the processing, storage and management of these personal data. In compliance with the law of December 8th 1992 on the safeguarding of personal privacy, the data which are entered are only used for administrative purposes and will not be passed on to third parties. After a simple request and without further costs the user can consult these data at all times. If the user wishes so, they will be corrected within a reasonable span of time and without further costs.