



1337 coding school  
Mail central, Bâtiment B  
25000 Khouribga,  
MOROCCO

## ACADEMIC RESULTS FOR HAMZA BEN LAAZIZ

---

I, the undersigned Larbi EL HILALI, Managing Director of 1337 coding school located at Mail central, Bâtiment B 25000 Khouribga, Morocco, hereby certify that:

**Hamza Ben Laaziz, born on April 10, 1998 in Azilal (Morocco)**

obtained the grades detailed below as of January 17, 2025.

This certificate is delivered upon request for all legal intents and purposes.

**Selected in: July 2023**

**Curriculum started on: October 30, 2023**

**Curriculum ended on: -**

The progression of the student inside the curriculum is represented by its level, over 21.

**The current level of the student is: 5.27.**

The 42 curriculum is divided into two halves: the common core and the 42 advanced part. Once students complete the first half (the common core), they have the option to either continue their journey in the 42 advanced part, or conclude their progression and become an alumni at any point during this second part.

**The current situation of the student is: in the Common Core.**

See details below.

Made in Khouribga, on January 17, 2025

## DETAILS

Here is a description of each part of the curriculum and the current position of the student:

### The Common Core

The common core of the 42 curriculum represents the minimum set of skills to be ready for a first professional experience. It provides basic and standard coding skills, as well as a fruitful range of soft skills. The delay of the CC is approximately between 1 and 2 years. The following information represent the skills developed during this part of the curriculum and the current progression of the student:

**Hamza Ben Laaziz : Common core achieved at: 57%.**

Developed skills during the entire common core:

- **Algorithms & AI:** Standards algorithms on standard structures: searching, sorting, insertion, deletion, balance, on: arrays, linked lists, trees. State machine and asynchronous management.
- **Graphics:** Image management, RGB structure of an image, manipulating areas, drawing into an image, interacting with the window management system and getting user events and inputs from keyboard and mouse, programming with callbacks and event loop.
- **Group & interpersonal:** Collaboration, relationships and group management situations, including different kinds of interactions between people (friendly, tensions ...)
- **Imperative programming:** Basics of coding in C : the C syntax, variable, loops, conditional branches, functions, recursivity, instructions, calculus and expressions, comparisons operators, standard and advanced types, strings processing, structures, includes and libraries, memory allocation and release, linked lists, trees, the C standard library
- **Network & system administration:** Basics of computer networking : IP addresses, subnets, default routing, local network structure, host to host connectivity to network services; Basics of system administration : operating system installation with Linux, setting up security, access, users, storage, installing network services like mail, dns, web server, ...
- **Object-oriented programming:** Object programming principles in C++, classes, namespaces, constructors and destructors, memory management in C++, inheritance, abstraction, overloading, templates, standard C++ library types and tools
- **Rigor:** The need to fulfill administrative and technical constraints. The need for a wide and deep testing process to eliminate failure.
- **System programming:** Classic Unix system interactions : system calls, filesystem access and management, process creation, execution, management; inter-process communications : pipes and signals; device management and ioctl, terminal capabilities; network communication : TCP & UDP sockets, DNS resolution, endianness
- **Web:** The client-server architecture involved in the web, role and actions of the web server, role and actions of the web browser; The HTTP protocol; Web technologies involved : HTML, CSS, Javascript, images and videos; Backend language and framework for dynamic websites: one among php, ruby, python, go, javascript, Rails, Symfony, Django, Node, ... ; MVC model; users web services : web sessions, authentication, cookies, search, caddy, backoffice configuration, ... ; Basics of user experience, user interface, and design.

Details of each validated project in appendix 1.

## The 42 Advanced Part

The 42 Advanced offers a choice of path among various ICT specialisations: each student can select the topic(s) she/he wants to develop and improve. This part of the curriculum also contains several professional experiences (internships, part-time jobs, ...).

No projects completed yet

Professional experience: no professional experience yet

Details of the validated projects in appendix 2.

## APPENDIX 1

Projects covered during the common core:

Name	Estimated workload	Result	Associated skills	Validation date
Libft	70H	Pass with bonus	Rigor, Algorithms & AI, Imperative programming	December 04, 2023
ft_printf	70H	Pass	Rigor, Algorithms & AI	December 13, 2023
get_next_line	70H	Pass with bonus	Rigor, Unix, Algorithms & AI	January 22, 2024
Born2beroot	40H	Pass with bonus	Rigor, Network & system administration	February 25, 2024
so_long	60H	Pass	Imperative programming, Graphics	March 24, 2024
Exam Rank 02	0H	Pass		May 02, 2024
push_swap	60H	Pass	Rigor, Unix, Algorithms & AI, Imperative programming	May 02, 2024
pipex	50H	Pass with bonus	Unix, Imperative programming	May 22, 2024
Exam Rank 03	0H	Pass		July 10, 2024
minishell	210H	Pass with bonus	Rigor, Unix, Imperative programming	August 21, 2024
Philosophers	70H	Pass	Rigor, Unix, Imperative programming	September 05, 2024
NetPractice	50H	Pass	Rigor, Network & system administration	October 06, 2024
cub3d	280H	Pass with bonus	Rigor, Algorithms & AI, Imperative programming, Graphics	December 06, 2024
CPP Module 00	22H	Pass	Rigor, Imperative programming, Object-oriented programming	December 23, 2024
CPP Module 01	12H	Pass	Rigor, Imperative programming, Object-oriented programming	December 27, 2024
CPP Module 02	12H	Pass	Rigor, Imperative programming, Object-oriented programming	December 30, 2024
CPP Module 03	12H	Pass	Rigor, Imperative programming, Object-oriented programming	January 05, 2025
CPP Module 04	12H	Pass	Rigor, Imperative programming, Object-oriented programming	January 10, 2025
Exam Rank 04	0H	Pass		January 16, 2025
CPP Module 05	25H	in progress	Rigor, Imperative programming, Object-oriented programming	-

## APPENDIX 2

Projects covered during the 42 advanced:

Name	Estimated workload	Result	Associated skills	Validation date
-				

Internship and professional experiences				
Company name	Duration	Validation	Skills	Validation date
-				

## APPENDIX 3

Description of each covered project:

Name	Description
Libft	This project is your very first project as a student at 42. You will need to recode a few functions of the C standard library as well as some other utility functions that you will use during your whole cursus.
ft_printf	This project is pretty straightforward, you have to recode printf. You will learn what is and how to implement variadic functions. Once you validate it, you will reuse this function in your future projects.
get_next_line	May it be a file, stdin, or even later a network connection, you will always need a way to read content line by line. It is time to start working on this function, which will be essential for your future projects.
Born2beroot	This project aims to introduce you to the wonderful world of virtualization.
so_long	This project is a small 2D game with minilibx. You'll learn about textures, sprites and tiles.
Exam Rank 02	This project will evaluate your abilities and knowledge about programming.
push_swap	This project involves sorting data on a stack, with a limited set of instructions, and the smallest number of moves. To make this happen, you will have to manipulate various sorting algorithms and choose the most appropriate solution(s) for optimized data sorting.
pipex	This project aims to deepen your understanding of the two concepts that you already know: Redirections and Pipes. It is an introductory project for the bigger UNIX projects that will appear later on in the cursus.
Exam Rank 03	
minishell	The objective of this project is for you to create a simple shell.
Philosophers	This project aims to teach concurrent programming, focusing on multithreading and multiprocessing.
NetPractice	NetPractice is a general practical exercise to let you discover networking.
cub3d	This project is inspired by the world-famous eponymous 90's game, which was the first FPS ever. It will enable you to explore ray-casting. Your goal will be to make a dynamic view inside a maze, in which you'll have to find your way.
CPP Module 00	This first module of C++ is designed to help you understand the specificities of the language when compared to C. Time to dive into Object Oriented Programming!
CPP Module 01	This module is designed to help you understand the memory allocation, reference, pointers to members and the usage of the switch in CPP.
CPP Module 02	This module is designed to help you understand Ad-hoc polymorphism, overloads and orthodox canonical classes in CPP.
CPP Module 03	This module is designed to help you understand Inheritance in CPP.
CPP Module 04	This module is designed to help you understand Subtype polymorphism, abstract classes and interfaces in CPP.
Exam Rank 04	