

Training guide



Knowledge
is **key!**

A higher level with our
pragmatic, tailor-made
training programs.

betabit



managed
software
development

Knowledge development is one of the important concerns of our time. Technological developments are accelerating and the highly skilled employee expects an investment in his development. It has become an important part of everyone's career, a huge driver. In short, knowledge is key!



At Betabit, we have years of experience transferring knowledge through training courses and workshops, our own Academy, Betatalks videos and podcast. Over the years, we have specialized in personal development programs. Both for our colleagues and valued clients.

Adding value by:

- **Tailor-made with personal attention**
- **Pragmatic and interactive learning**
- **Immediately applicable knowledge**
- **The latest techniques**
- **Lifelong learning**

With over 16 years of Azure experience, we are the market leader in software development, assessment and training in Microsoft Azure. With extensive knowledge of the latest features and developments in the areas of, among others, .NET, Azure, testing, C#, frontend, security, DevOps and AI. Choose one of our training programs or courses and benefit immediately



"I highly recommend Betabit. The training courses are thorough, up-to-date and delivered by experts in the field. They have done a great job helping our teams be better prepared for cyber threats."

Jeroen de Knegt,
RGF Staffing

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Individual tailor-made programs

These are training programs with customized content; fully tailored to the knowledge needs and level of the participant and flexibly scheduled.

We create an individual training plan for you. A program tailored to the training need and knowledge level, determined through an extensive intake - via Microsoft Teams (or otherwise if desired) - and the participant's technical resume.

Our dedicated trainers then guarantee personal guidance in which we alternate theoretical knowledge and self-study with practical assignments, specifically

tailored to the participant. Where and when you want, without loss of time or resources.

In short, personalized, flexible training programs for both junior and senior developers and testers.

Training programs consisting of a selection of the following modules:

Backend

Git

You'll learn all about the importance of software version control. Because when you are working on an application with multiple people, it is important that no code is lost because you overwrite each other's work. Git is a widely used program to eliminate this risk for developers.

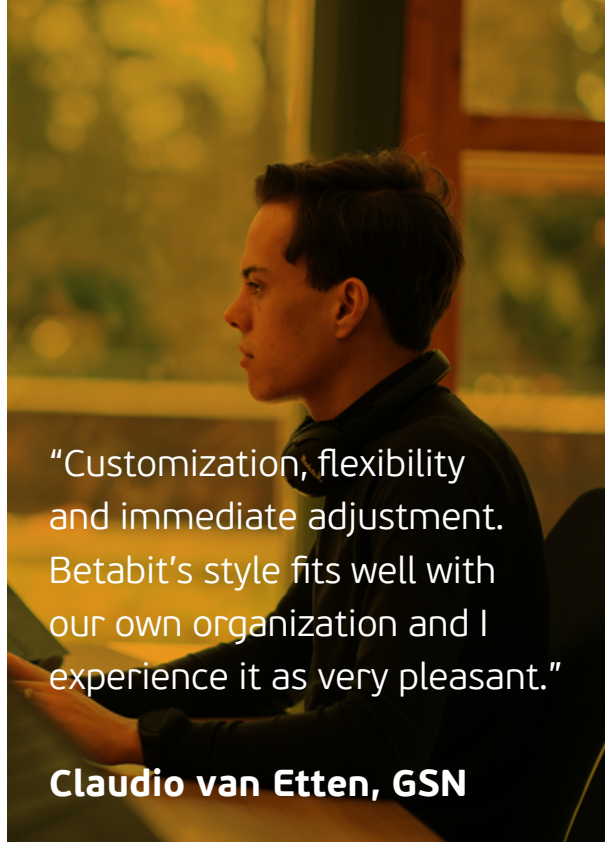
C#, OOP & LINQ

We'll get started with C#, the widely used Microsoft programming language. You learn the basics, such as if statements (if...else) and for-loop, and you go into more depth with generics and interfaces. With OOP (Object Oriented Programming), you learn to build projects as structurally as possible in objects. The big advantage of this is that the code is broken down into logical components and is easy to reuse. And with the LINQ (Language Integrated Query) framework, you learn to extract data from sequences, lists and other types of collections using special queries.

SOLID & Clean coding

Guidelines help you write good code; your code becomes more organized and easier to extend. The best-known guidelines are the SOLID principles; the five most important principles in object-oriented programming:

- Single responsibility
- Open-closed
- Liskov substitution
- Interface segregation
- Dependency inversion



"Customization, flexibility and immediate adjustment. Betabit's style fits well with our own organization and I experience it as very pleasant."

Claudio van Etten, GSN

You will be thoroughly introduced to these principles and how to apply them in your code.

Dependency Injection (DI)

Dependency Injection is an important technique where you decouple a program's dependencies from its behavior. This makes it easier to make modifications and test code independently. You will learn to use this technique in the .NET Core environment, learning about deploying interfaces and linking services within ASP.NET Core.

Refactoring

Sometimes you need to modify existing code so that it better conforms to the programming principles of good code. Making these kinds of adjustments is called refactoring. By doing this, you learn to modify the structure of the code without changing the functionality.



Unit Testing

To make sure your written code works, you need to test it. Writing unit tests is therefore an indispensable skill, even for developers. You divide your code into units and write automated tests that check whether the units do what is expected. The (previously learned) concept of Dependency Injection is crucial here. It allows you to test code independently of the pieces of code on which it depends.

Databases (SQL & NoSQL)

You will learn to use SQL Server (Microsoft's database management system) and SSMS (SQL Server Management Studio) to create and set up a database with the right keys and properties for all your data.

Entity Framework (EF)

We teach you to build data models with Entity Framework Core, an Object-Relational Mapper. You'll also learn how to use EF Core to make the software work with data from your databases. And you'll learn how to integrate EF into your advanced software architecture.

Data access patterns

You are going to create an abstraction layer between the Data Access Layer and the Business Logic Layer. By using Repository and Unit of Work Patterns, you are able to isolate data changes so that they do not directly affect the business logic layer. As a result, you can more easily apply automated unit tests or test-driven development.

HTTP

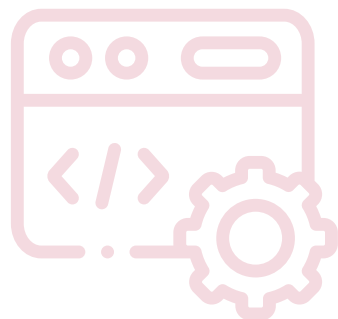
The Hypertext Transfer Protocol (HTTP) is used for traffic between server and client, including when you retrieve the content of a website by typing the URL into your browser. You'll learn all about the well-known methods (e.g., GET and POST), sending requests, handling responses, and HTTP in the context of REST Web APIs.

ASP.NET Core

ASP.NET Core is a development model, integrated with .NET, designed to easily create dynamic web applications and web services. You will get to work with all the components of ASP.NET Core so you can easily build a web application.

Security

We cover website security, demonstrate the best known and most common attack methods and the potentially significant damage of these attacks. You will learn how to prevent these attacks, regardless of the development techniques used. In addition, we pay attention to HTTPS (HyperText Transfer Protocol Secure).




Azure

Azure is Microsoft's important cloud computing platform, indispensable in your training. It is a, still expanding, collection of cloud services used to build, manage and deploy applications. You'll be introduced to the most relevant Azure services, such as Azure Blob Storage, which allows you to store data in the cloud with fairly minimal code.

Final assignment

All your gained knowledge about Web APIs (Application Programming Interface) will be directly applied to a programming project during your training, for example a webshop or a navigation application. You will learn to divide your applications into a frontend and backend and how the two communicate with each other via a Web API (e.g. via a REST protocol). You will also work with external Web APIs, for example the Web API of Google Maps for showing a bicycle route on your own website.



"For Global Factories, it is the way to ensure that new developers get the hang of C# and .NET smoothly. The interactive format with assignments and code reviews, provides a great incentive to actually apply the learning material pragmatically. We hire junior candidates more easily and current team members stay focused on their core tasks. Bottom line, this saves time without compromising on code quality."

Christ Akkermans,
Global Factories

Frontend

HTML, CSS

The basis for almost every website is an HTML document. With HTML (HyperText Markup Language), we describe the structure of a webpage. This is done by specifying the role of the content on a page (including the text, images and videos). Then CSS (Cascading Style Sheets) can be used to describe how the page should look, for example, that all pieces of text that represent a hyperlink should be underlined.

JavaScript

Nowadays, it is impossible to imagine frontend applications without JavaScript. JavaScript is the basis of NodeJS and therefore of many modern frontend technologies. You will learn what JavaScript is, how it works and what you can do with it. Later, you will apply the knowledge gained when building a frontend application.

TypeScript

The main programming language within web development is JavaScript, but anyone who has ever worked with JavaScript knows that in large projects it can be difficult to structure code properly. TypeScript is a superset of JavaScript that adds OOP concepts. This makes it easier to structure your code like you're used to with other OOP languages (such as C#). We'll teach you what elements TypeScript adds to JavaScript.

Angular

Angular is a TypeScript-based frontend framework for building frontend applications. You will learn how to make Angular communicate with your built API and how to display information in a user-friendly way on a website. To work with Angular, you will combine previously accumulated knowledge of ASP.NET Core, HTML, CSS, JavaScript and Typescript.

React

React is a frontend JavaScript library for building user interfaces. In React, you can easily and quickly set up Single-Page Applications. You get to work designing and building a frontend application, using your previously built API. You will learn to create a user-friendly user interface with components built in JSX (JavaScript XML).

Final assignment

You apply your acquired frontend knowledge to your self-selected demo project. For example, you learn to add login functionality to your application. In Angular you design an HTML login page and write a function (in Typescript) that makes the frontend send the information (in this case your username and password) to the backend. The backend then checks in the database that the username and password are a valid combination.

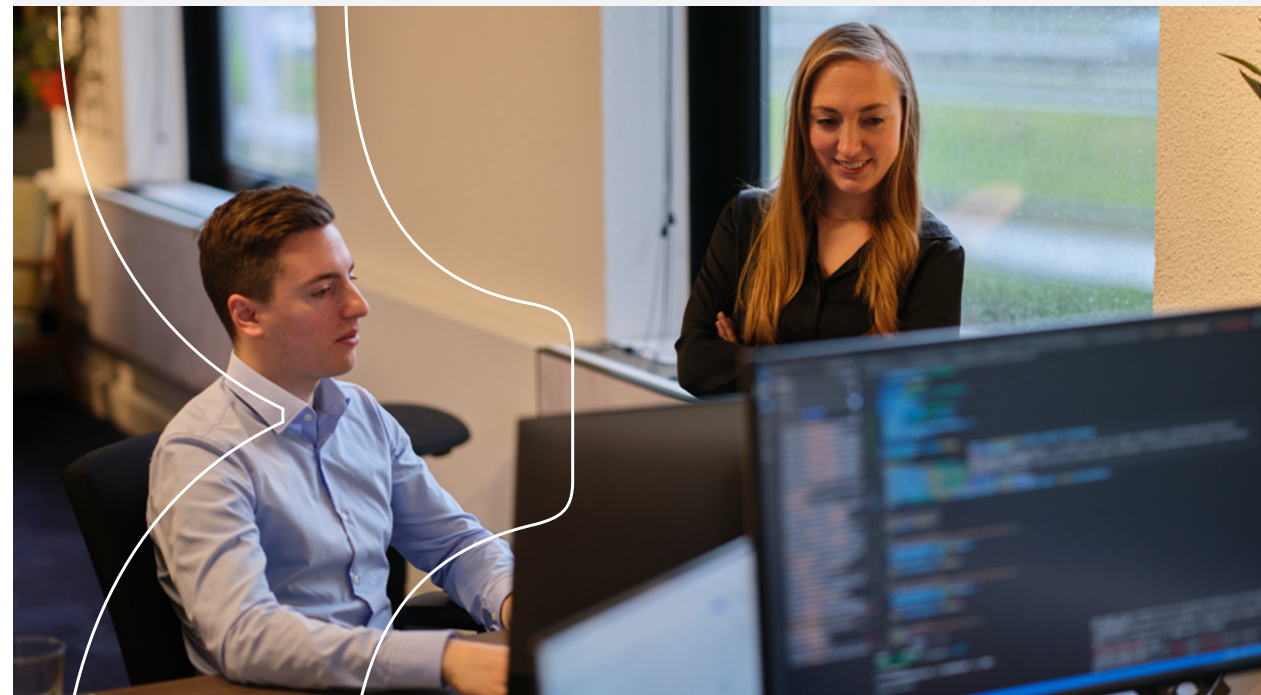
2 In-company training courses

The name says it all, we offer tailor-made group training courses for your team and at your location. In consultation, we ensure that the training perfectly suits your needs in terms of date, location and content. This can be a unique customized training on (one of) the topics mentioned above or a regular training adapted to your situation, for example, our security and AI training courses.

Security training courses

Two hands-on security training courses that will arm your organization against the biggest security threats. As a developer and software development team, you need to know the latest developments and techniques to prevent

your organization from becoming the next victim. Our security courses are the most effective first step to improving your organization's software development processes and culture and minimizing software risks.





Application Security: Awareness

One-day training on using the OWASP Top 10 and the API Security Top 10. We will work through the most common threats, specifically API security strategies and solutions. The result is understanding and mitigating the unique vulnerabilities and security risks of Application Programming Interfaces (APIs).

Application Security: Deep Dive

One-day training for developers and development teams who already understand the basics of security, are aware of the risks, and want to act accordingly. You are familiar with the most common threats and possible solutions. We then take a hands-on, dynamic approach to code and go in depth with key security issues. In this way, we embed a security-first mindset into all processes of software development.

AI en Azure; Software Development Boost

How do you apply AI most effectively? Safely and responsibly? And, perhaps more importantly, how do you do it smarter and faster than the competition?

Azure is the platform on which AI comes to life. For you, too. Whether or not you have experience with Azure or AI, within a half-day session, we will help you build software more effectively. Including best practices and pragmatic demos on:

- GitHub Copilot
- Workflow optimizations
- Azure DevOps integrations
- Azure OpenAI
- Machine Learning Studio
- Privacy, security, automation bias

At the end of the training, participants will have a solid foundation and be able to confidently, independently expand their knowledge and experience.

3 Knowledge sessions

In addition to the training courses and options already mentioned, we also provide informal gatherings, our knowledge sessions, where you and your colleagues gain more knowledge on a specific topic.

A selection of our knowledge sessions:

- Test Driven Development
- Business Automation with AI
- Craftsmanship in software
- The power of GitHub Copilot
- Building greener software
- Clean Architecture
- Bicep deep dive
- Monitoring & Logging in Azure

“As the proverb says, ‘The knowledge gained through learning is a treasure that follows its owner.’ As mentors, we enjoy sharing knowledge and discovering that both student and mentor learn and grow together. Embrace challenges, stay curious, and never stop coding.”

**Katarina & Marko,
Betabit trainers**

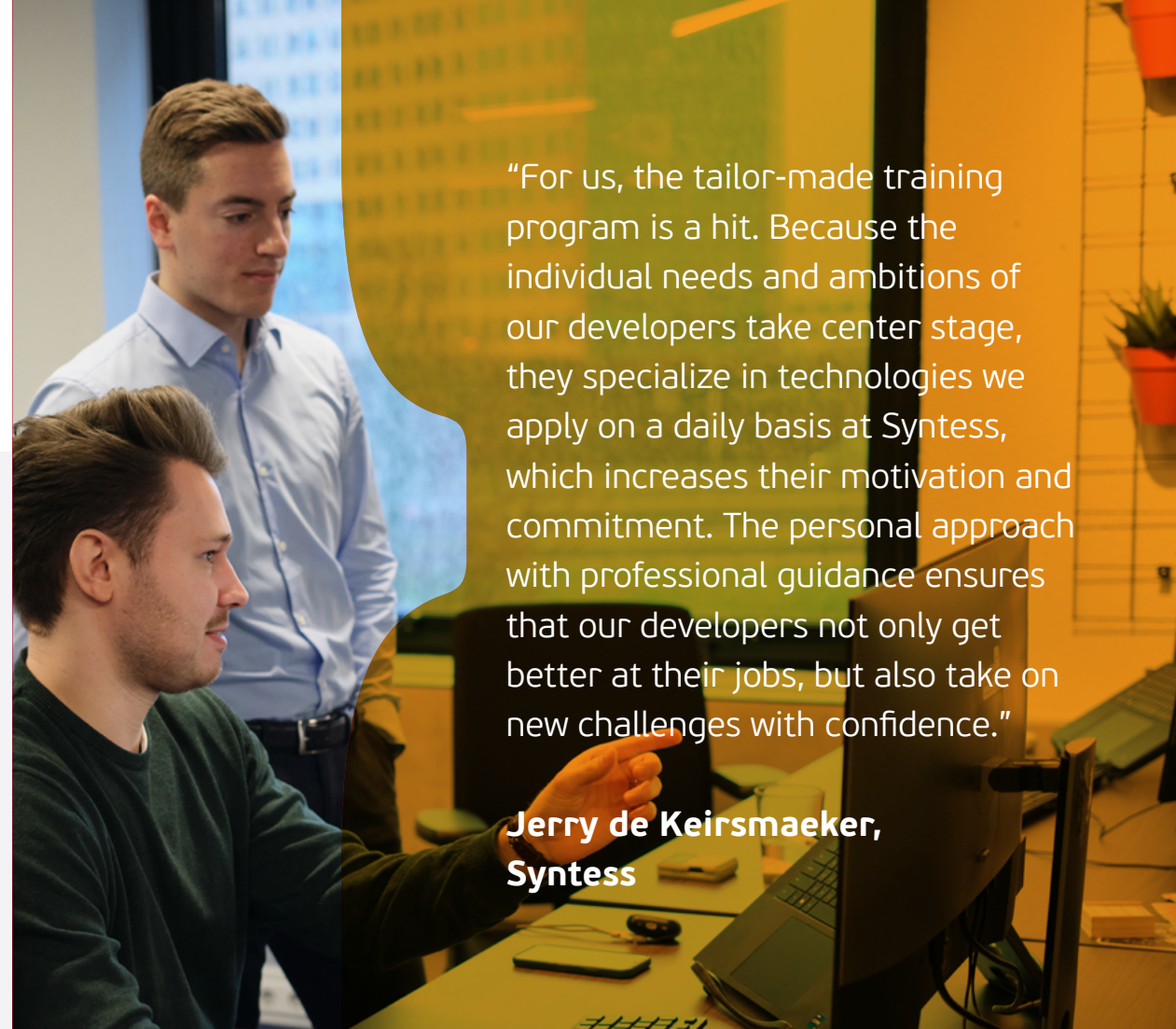


4 Certification courses

How do you ensure that you start the Microsoft exam excellently prepared?

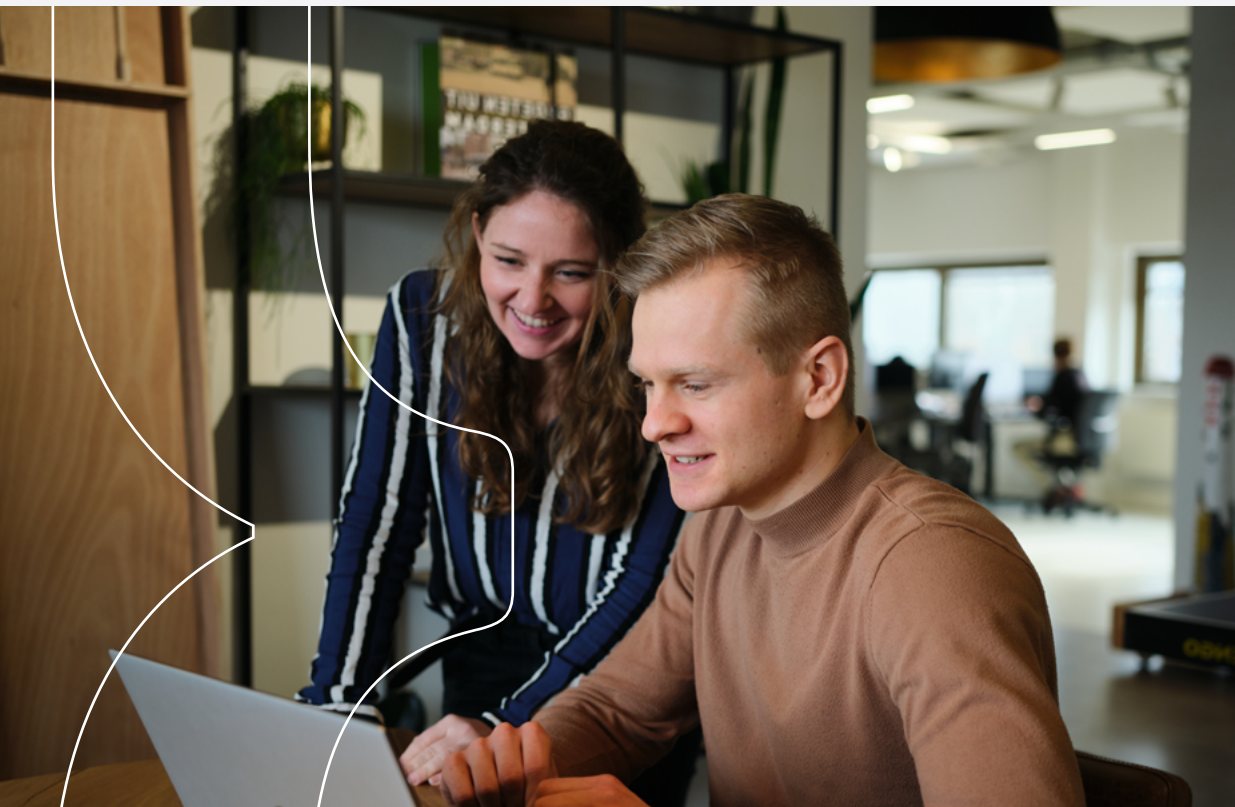
Betabit helps you with hands-on certification courses based on real-world assignments developed by us, supplemented with the official Microsoft material. Among others, you can choose from the following certification courses:

- Azure Fundamentals: AZ-900
- Developing Solutions for Azure: AZ-204
- Azure DevOps Solutions: AZ-400
- Azure AI Fundamentals: AI-900
- Azure AI Engineer: AI-102
- Azure Data Fundamentals: DP-900



“For us, the tailor-made training program is a hit. Because the individual needs and ambitions of our developers take center stage, they specialize in technologies we apply on a daily basis at Syntess, which increases their motivation and commitment. The personal approach with professional guidance ensures that our developers not only get better at their jobs, but also take on new challenges with confidence.”

Jerry de Keirsmaker,
Syntess



5 Ask-the-Experts

Our most pragmatic form of gaining knowledge is our Ask-the-Expert session. One of our experts will work with your team on your issues at your location.

Every organization has its own software challenges and it is always surprisingly fruitful to spar with a specialist from outside the organization. Someone who takes a fresh look at your challenges and can give your team or process that necessary extra push.



Website



Podcast



YouTube



LinkedIn



Interested?
More information?

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