

Choose IT!_Curriculum

Name of the continuing education institution

BCS Koolitus AS (hereinafter BCS Koolitus).

1. Name of the curriculum

„Choose IT!“ (Vali IT!) retraining program for adults.

2. Curriculum group and basis for curriculum preparation

CURRICULUM GROUP: Front-end development and Product Owner & Business Analyst.

THE BASIS OF CURRICULUM COMPOSITION: Junior software developer level 4 professional standard (partly).

3. Purpose and learning outcomes

OBJECTIVE: The purpose of the retraining program is to provide participants with basic software developer skills. Learners who have completed the program can start working in a software development company or organization as a junior software developers. Additionally, they can analyze and research different topics and come up with the process and design mockups, and have an understanding and experience of all the steps that happen before and after software development.

LEARNING OUTCOMES:

Understands the process of turning client needs into development tasks.

Has the ability to collect and analyze business needs and come up with solutions.

Has the knowledge of each role in development team and their functions.

Can prioritize development tasks and how to work towards achieving goals.

Prototypes solutions

- Designs the product (application, part of the system) and its architectural solutions
- Writes program code
- integrates created applications with other system parts like API, backend systems, databases and other integrations
- Tests applications
- Implements and installs solutions
- Participates in both independent and team-based software development work
- Participates in various working methods and roles of the development process

4. Target group and conditions for starting studies

THE TARGET GROUP OF THE TRAINING IS PEOPLE OF WORKING AGE WHO:

- has at least a bachelor's degree or an equivalent level of education;
- has previously studied a higher education level I or II level curriculum (i.e. applied higher education, diploma, bachelor's, master's, bachelor's, and master's curricula);
- is proficient in English at least B2 level;
- has at least 3 years of previous work experience in any field, except experience working in a position requiring IT education.

5. VOLUME AND STRUCTURE OF THE STUDY:

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Contact learning¹: 6 weeks (30 days; 8 academic hours per day, altogether 240 academic hours).

¹ Contact learning = classroom-based, i.e. classroom-based learning (if necessary, additionally online).

LEARNING ENVIRONMENT AND TOOLS:

Contact learning takes place in a modern computer classroom, where students are provided with the necessary tools for learning (if necessary, the possibility of online learning is added); lecture and practical tasks on each contact study day.

6. Description of the learning process, including learning content, learning methods, and materials

COURSE FORM AND CONTENT:

Contact learning – auditory (in the computer class of BCS Training or online) 8 ac. hours a day for 30 days.

1st/ 2nd week

Product ownership/analyst program:

- Introduction to IT
- Overview of development team roles
- Development processes- from idea to product
- How to understand client and their needs?
- Analyze and design
- Practical exercise starts- Meeting the client
- Writing and presenting the proposal
- Going into details- analyzing
- Designing the solution
- Ready for development

Front-end programm:

- HTML, CSS, JavaScript and how they play together
- Asynchronous programming
- JavaScript, Git -> Basic knowledge.
- Development process and development life cycle
- Work tools: Installation of proper IDE (Webstorm or IntelliJ) and setup Git, etc
- Summary of the week, repetition
- Basic programming constructs
- Numeric data types, elementary operations and operators.
- Expressions
- Strings, their methods and the most common operations-activities with strings. Conversions between numbers and strings
- Boolean expressions

3rd week

- Constructs if, else, switch, conditional expressions
- Different types of loops, arrays

- Functions
 - Function parameters, return value.
- Recursive functions
Learners solve algorithmic tasks independently
- Overview of different frameworks (Angular, Vue, React)
 - Introduction into ReactJS
 - Install deploy and run a first skeleton React app with npx
 - Components (functional, class based) and why we pick functional coding in React
- Summary of the week, repetition

4th week

- Component states, component creation, display and reuse
 - Component lifecycle methods, event handling
 - Conditional display of components. Lists, Inputs, Buttons, Forms
 - React Hooks (useState, useEffect, useContext, useMemo, useRef etc)
 - Design frameworks like Material-UI
 - Connecting to a backend and retrieving data with Fetch/Axios
- Summary of the week, repetition

5.-6. week

Starting an independent project, forming groups (pairs).
Introduction, analysis and planning of the task (in groups)

- Design creation
- Application development
- Application installation/deployment

Presentation of the completed project

LEARNING METHODS:

- lecture;
- video lecture;
- exercise tasks;
- programming, pair programming;
- agile software development practices and work methods;
- seminars, group work, discussions, feedback and retrospectives in the group;

STUDY MATERIALS:

The main learning materials are specially created for the given training and are digital in format. Additional study materials may be used as additional materials as needed.

1. Evaluation, i.e. conditions for completing studies

Contact study is considered completed after the successful defense of the group project. The conditions for completing studies are the acquisition of learning outcomes and participation in studies to the required extent.

2. Documents to be issued

A certificate will be issued to the learner who has acquired the learning outcomes and successfully passed the assessment based on the current continuing education standard.

3. Qualification of trainers

The core team of trainers includes at least one trainer who has at least an applied higher education or a bachelor's degree in informatics, information technology, computer science or technical science, or an equivalent level of education, and who has continuously conducted software development training for at least the a year. Practitioners in the field are involved as additional trainers.

4. Language of study

The training in this group is mainly planned to take place in English.
The study materials are mainly in English.

5. Time of curriculum approval:

20.12.2022