DYNAMIC LEARNING PACKAGE

Partner organisation	DEX Innovation Centre
Other partner organisations involved (LIAG)	--------
Country	Czech Republic
NUTS2 region	Severovýchod (Northeast)
City/Municipality	Liberec
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Contents

1. Objectives of Dynamic Learning Package (DLP)

Dynamic Learning Package is a skill development learning program for youth targeting several identified points from SWOT analysis of the region described in Local Action Plan.

Specifically, it targets the following identified challenges:

- To lower regional brain drain
- To strengthen/develop entrepreneurship culture and skills within youngsters
- To boost non-formal education outside of the traditional school facilities
- Lack of the ICT skills and the problem of outdated and obsolete ICT equipment at the educational institutions, essentially primary and secondary 1schools
- To create and establish innovative & start-up-friendly and sustainable network in regional ecosystem

The 4 core objectives of DLP are therefore:
- Motivation for digital entrepreneurship
- Building of knowledge of using innovative digital technologies
- Developing entrepreneurial skills
- Cross-fertilization of digital business ideas

2. Target group for DLP

Given the regional strength in university/students and the regional opportunity in high schools and secondary grammar schools, the target groups for participation in DLP are:

- high school / secondary school students in their 2nd half of studies (17-19 years)
- university students and PhD. students (20-29 years)
- these students are/have:
  - ICT geek, technically based, interested in technology and innovation
  - the basic technical skills - soldering, grinding, cutting, etc.
  - the basics of Computer aided design

3. Recruiting target groups

Recruitment of target groups for DLP will be done in the following ways.

3.1 High school / secondary school students in their 2nd half of studies (17-19 years)

- our goal is to focus on schools whose students will have a basic understanding of digital technologies (high technical schools) and will have basic experience in modelling or programming
- however, since we have good experience and references to students of Gymnasiums, we will target them as also among the students of these schools, according to the statistics of the Technical University of Liberec, many students of technical fields at this university are from Gymnasiums
- mass-promotion of DLP and benefits of participation for their students directly by the secondary / high school teachers / directors in their classes through cooperation with DEX Innovation Centre on DLP promotion
- direct follow up promotion to specific secondary / high school students made in cooperation with the teachers
- flyers with promotion to DLP available at schools´ web, notice boards and several relevant places
- social media promotion via Facebook and YouTube
- specific 2 promotion community events (together with university students as described in 3.2)
- The DLP program will be available to students from different schools, but our campaign will specifically target these schools (and students of these schools aged 17-19):
  - SPŠSE a VOŠ
  - Střední škola strojní, stavební a dopravní
  - SPŠT - Jablonec nad Nisou

3.2 University students and PhD. students (20-29 years)

- due to the location where our Innovative Lab will be located (Liberec), our main target group will be students of the Technical University of Liberec
- mass-promotion of DLP and benefits of participation for their students directly by the specific faculty university deans / teachers in their classes through cooperation with DEX Innovation Centre on DLP promotion
- direct follow up promotion to specific university / PhD. students made in cooperation with the teachers
- flyers with promotion to DLP available at faculties´ web, notice boards and several relevant places including the students dormitories
- social media promotion via Facebook and YouTube
- specific 2 promotion community events happening (together with highs school / secondary school students

4

- The DLP will be available to students at all faculties of the Technical University of Liberec, but our campaign will be specifically targeted at faculties:
  - o TUL Faculty of Mechanical Engineering
  - o TUL Faculty of Mechatronics, Informatics and Interdisciplinary Studies

4. Dynamic Learning Package (DLP)

4.1   DLP time frames

Based on the school time frames of university and high / secondary schools and travelling of non-residential students, the DLP will begin in beginning of February 2019 and will run until end of March 2019.

To be largely available for both primary target groups, DLP will combine evening sessions during the middle of the studying week (e.g. Tuesday-Wednesday) with few intensive all-weekend sessions.

Evening hours in the middle of the week are selected because we target both high school and college students. When it comes to specific days (Tuesday or Wednesday), we have to work with the fact that many students at university teach only Wednesday or Thursday, and a large part of them from Liberec leaves for the weekend away.

As part of the curriculum, weekend teaching will also be included, as we want to include intensive workshops in the DLP that will focus on the development of technical skills. Another reason is the use of external lecturers, which would be difficult to engage in regular courses.

4.2   DLP learning methods

DLP will use the following learning methods:

- *motivational story-telling speeches* – First of all, it will be very important for DLP participants to "dive" into the issue. In order to motivate students to gain their attention, we want to provide them with specific stories on which to better visualize their options.
- *class lectures* – The classroom lecture will also be a necessary part, as students are required to know basic rules, for example.
- *individual/group workshops with experts* – In order for the DLP to have a real effect, we need to involve lecturers with training experience in the workshop management. These experts will work as lecturers, but also as mentors.
- *experimental learning sessions with the digital technologies* - It will be an intensive training course, which due to more time-space offers enough space for group and individual

5

leadership program participants. These intensive courses will focus for example on 3D modelling or robotics.

- *working with business model canvass* – Participants will acquire a simple and complete tool for designing the business model, analysing it and innovation.

- *elevator pitching* - Participants will get acquainted with this presentation technique and will acquire it.

- *individual mentoring and couching* – Emphasis will also be placed on individual leadership where participants will be given support to implement their ideas.

- *peer-to-peer sessions* – Participants will be able to directly discuss their ideas with experts, but also with successful entrepreneurs.

- *presentation techniques* – To present your own ideas, it is necessary to acquire presentation skills and techniques.

As there are 2 main target groups, whose relative background experience and knowledge can differ in terms of detail, DLP will, in its modules, plan relevant modules in 2 variants – for the more advanced and standard participants.

4.3   DLP targeted skills

Participation in whole DLP will bring both target groups the following skills:

Developing entrepreneurial skills

- generating ideas
- critical thinking
- culture of failure
- risk taking
- problem sensitivity
- ideas management
- strategic thinking
- persistency
- communication
- creativity
- flexibility
- pro-activity
- self-initiative
- self confidence
- self-presentation
- leading

- organizing
- teamwork
- interpersonal relationships
- peer-to-peer learning/support
- project management
- legislation

Motivation for digital entrepreneurship

- motivation
- entrepreneurial and innovative culture
- persuasion

Building of knowledge of using innovative digital technologies

- digital competences
- work safety

6

4.4   DLP modules

Module 1	2GETINSPIRED
Skills targeted	motivation, generating ideas, critical thinking, self-initiative, entrepreneurial and innovative culture, culture of failure
Description of module	- 2x20min of successful stories of young entrepreneurs who successfully launched their business in digital business topics - e.g. 3d printing, IoT, prototyping, etc., - introduction from DEX Innovation Centre to DEXIC Fablab, DLP and their aims - moderated discussion
Learning method	motivational story-telling speeches
Duration and time	2 hours, evening session

Module 2	2EXPLORE
Skills targeted	work safety, digital competences, responsibility, legislation, generating ideas
Description of module	familiarization with FabLab equipment, demonstration of options, introductory basic training, using interactive videos, etc., basic signing of safety rules for all
Learning method	class lectures
Duration and time	2 hours, evening session

Module 3	2DESIGN&PLAY
Skills targeted	digital competences, creativity, generating ideas, self confidence
Description of module	3d modelling design workshop, PCB schemes design workshop, Arduino workshop (e.g. working with microcontroller Arduino and its variants. Connection of various sensors and actuators (colour diodes, displays, temperature sensors, motors …). Working with a 3D modelling program – step 1 and step 2
Learning method	experimental learning sessions with the digital technologies, individual/group workshops with experts
Duration and time	3x7 hours, weekend sessions

Module 4	2INVENT
Skills targeted	creativity, ideas management, problem sensitivity, generating ideas, entrepreneurial and innovative culture
Description of module	workshop on brainstorming ideas with finalization of simple idea description
Learning method	individual/group workshops with experts
Duration and time	3 hours, evening session

Module 5	2DEFINE
Skills targeted	teamwork, strategic thinking, organizing, generating ideas, communication, interpersonal relationships, motivation, flexibility, peer-to-peer learning/support, project management, persuasion, persistency, entrepreneurial and innovation culture
Description of module	canvass short presentation, group work, short presentation of ideas to mentors, individual mentoring
Learning method	individual/group workshops with experts , working with business model canvass
Duration and time	3 hours, evening session

Module 6	2CREATE
Skills targeted	pro-activity, teamwork, organizing, leading, self-initiative, digital competences
Description of module	free production time in FabLab based on pre-booked time in the week + technical support on spot
Learning method	experimental learning sessions with the digital technologies
Duration and time	8 hours, individual all day sessions

Module 7	2PRESENT
Skills targeted	self-confidence, motivation, teamwork, organizing, interpersonal relationships, communication, self-presentation, persuasion
Description of module	expert presentation for presenting idea/pitching, group work on their presentations of their ideas, 1st trial of presentations with feedback from expert
Learning method	presentation techniques
Duration and time	3 hours, evening session

Module 8	2SUCCEED
Skills targeted	self-confidence, motivation, teamwork, organizing, interpersonal relationships, communication, self-presentation, persuasion
Description of module	Final presentation of products
Learning method	elevator pitching , presentation techniques
Duration and time	2 hours, evening session

5. DLP indicators

DLP targets the following indicators of its success:

- minimum 300 young people addressed with possibilities to participate in DLP
- minimum 70 potential applicants to DLP participating in 2 promotional community events
- minimum 20 young people from target groups selected and participating in DLP

Annex - design of training modules

Module 1 - 2 GETINSPIRED

Target group:

1. *Secondary students (age 17) - mainly students of industrial schools and grammar schools*
2. *TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering*
3. *Students with basic technical skills - programming, 3D design, etc.*

Order number of the hour: 1

Skills targeted:

1. *motivating students to do entrepreneurship*
2. *creating your own ideas*
3. *development of critical thinking*
4. *promoting and developing entrepreneurial and innovative culture*
5. *motivation to own initiative*
6. *understanding that failure does not mean the end, but it may be the beginning*

Module contents: *Getting to know the project; introducing the organizer; general presentation of the program and the basic objectives; 3x presentation of a successful entrepreneurship - motivation to do entrepreneurship not only in the digital area; discussion*

Outputs:

1. *The failure may be good; the Participant knows the objectives of the project.*
2. *The participant knows the project promoter and the contact person.*
3. *The participant will be motivated to develop its entrepreneurial and digital skills.*

Teaching methods: *motivational story-telling speeches*

Equipment needed: *projector, microphone, pc*

Time allowance: *2 hours*

Time schedule of lesson:

Timing	Activities	Major role
17:00 – 17:20	*Introductory speech - Welcoming participants, general presentation of the New Generation Skills project (what problem does the project solve, what its purpose is), what is the purpose of the meeting and program of meeting*	*DEX IC*
17:20 – 17:50	*Motivational Speech (20 minutes of presentation + 10 minutes of discussion) - Speaker No. 1 Digital Innovation Entrepreneur - What was the motivation for entrepreneurship, what path has led to successful entrepreneurship (failures, failures, coincidences), what he considers to be*	*Guest speaker*

	his greatest success, what would recommend to young people interested in doing entrepreneurship	
17:50 – 18:20	*Motivational Speech (20 minutes of presentation + 10 minutes of discussion) - Speaker No. 2 - Digital Innovation Entrepreneur - What was the motivation for entrepreneurship, what path has led to successful entrepreneurship (failures, failures, coincidences), what he considers to be his greatest success, what would recommend to young people interested in doing entrepreneurship*	*Guest speaker*
18:20 – 18:50	*Motivational Speech (20 minutes of presentation + 10 minutes of discussion) - Speaker No. 2 - Digital Innovation Entrepreneur - What was the motivation for entrepreneurship, what path has led to successful entrepreneurship (failures, failures, coincidences), what he considers to be his greatest success, what would recommend to young people interested in doing entrepreneurship*	*Guest speaker*
18:50 – 19:20	*Discussion with speakers (moderated by DEX IC) - Why do they think little interest in doing entrepreneurship among young people, what they think are the greatest benefits / disadvantages of a entrepreneur's life. What was their motivation for doing entrepreneurship and going on the same path today? Where do you see opportunities for today's start-up entrepreneurs?*	*DEX IC + Guest speakers*
19:20 –19:30	*General Introduction to the DLP Program - Program Objectives, and its Schedule. Program content - What can they learn about the benefits of participating in the program and who they will be doing? Information for those interested - who they can turn to, what they have to meet and what they can get.*	*DEX IC*

Module 2 – 2EXPLORE

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 2

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.

Skills targeted:

1. to introduce participants to the principles of safe work in a FabLab
2. development of their digital competences
3. awareness of your own responsibility
4. basic legislation
5. creating your own ideas

Module contents: Getting acquainted with laboratory space; familiarization with the timetable and thematic timetable and other basic information of the program; demonstration of individual equipment; demonstration of the PC programs that participants will use; workflow; security measures; basic conditions of use

Outputs:

1. Participants know what the program is and agree with its rules.
2. The participant will know the basic rules of the FabLab.
3. The participant knows the security rules and measures.

Teaching methods: class lectures (telling, explaining, performing and observing, instructing, working and experimenting)

Equipment needed: pc, projector, 3d printers, solders, IoT Kits

Time allowance: 2 hours

Time schedule of lesson:

Timing	Activities	Major role
18:00 – 18:20	*Introductory speech - Welcoming participants, general presentation - description of the whole program - time scale, presentation of individual modules, timing, goals*	*DEX IC*
18:20 – 18:50	*Sample of individual devices (their functions and possibilities), demonstration of simple printing (FDM + SLS + PCB), familiarization with all the equipment of the FabLab*	*DEX IC*
19:00 – 19:45	*Principles of protection, principles of safety, success - basic rules, risks, basic maintenance (videos, presentations)*	*DEX IC*
19:45 – 20:00	*Introducing pc programs, download instructions*	*DEX IC*

Module 3.1. - 2DESIGN&PLAY

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 3

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment

Skills targeted:

1. development of digital competences
2. developing their creativity
3. generating ideas - thanks to the experience gained
4. strengthening self-confidence

Module contents: Introductory presentation; working with the IoT kit (for example Arduino and its variants); work with sensors and actuators (colour diodes, displays, temperature sensors, etc.); programming the IoT kit from your own computer

Outputs:

1. The participant will become acquainted with IoT kits (for example Arduino).
2. The participant will be able to program a simple "computer".
3. Participants will create their own projects.

Teaching methods: experimental learning sessions with the digital technologies, individual/group workshops with experts

Equipment needed: pc, projector, oscilloscope, IoT Kits

Time allowance: 7 hours

14

Time schedule of lesson:

Timing	Activities	Major role
09:00 – 09:30	*Introductory speech, presentation - presentation of the whole day program, possibilities of the IoT kit, demonstration of interesting products, division into groups (basic + advance)*	*DEX IC*
09:30 – 10:30	*Chapter 1 - What is IoT Kit, different types of IoT boards, how does the Arduino Uno board work and why it's so popular, what is a microcontroller, how to use the Arduino, powering and connecting Arduino to your computer, Uploading programs to your board*	*DEX IC + Workshop lecturer*
10:30 – 12:00	*Chapter 2 - Programming, basic and advanced language, user-defined functions*	*DEX IC + Workshop lecturer*
12:00 – 12:30	*Break*	
12:30 – 14:00	*Chapter 3 - Useful features, using and creating your own functions to write modular, reusable code*	*DEX IC + Workshop lecturer*
14:00 – 15:30	*Chapter 4 - Connecting a Arduino and display, connecting to another device*	*DEX IC + Workshop lecturer*
15:30 –17:30	*Chapter 4 - Creating simple game, calculator, or other simple PCs*	*DEX IC + Workshop lecturer*

Module 3.2. - 2DESIGN&PLAY

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: *4*

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment

Skills targeted:

1. development of digital competences
2. developing their creativity
3. generating ideas - thanks to the experience gained
4. strengthening self-confidence

Module contents: *Introduction to 3D design, participants will be divided into two groups (basic and advance) according to their previous skills; work with programs for 3D design; creation of simple models*

Outputs:

1. The participant knows the basics of modelling in 3D design (basic in Tinkercad, advance in Fusion 360)
2. The participant creates its own 3D model and prepares it for 3D printing
3. Participants prints several selected models

Teaching methods: *experimental learning sessions with the digital technologies, individual/group workshops with experts*

Equipment needed: *pc, projector, computer programs (Tinkercad – for basic, Fusion 360 – for advance), 3D printers*

Time allowance: *7 hours*

Time schedule of lesson:

Timing	Activities	Major role
09:00 – 09:30	*Introductory speech, presentation - presentation of the whole day program, division into groups, introduction of a 3D design program*	*DEX IC*
09:30 – 10:30	*Chapter 1 - familiarization with the program (by group), demonstration of basic possibilities, demonstration of work with the program*	*DEX IC + Workshop lecturer*
10:30 – 12:00	*Chapter 2 - creation of a simple model, demonstration of individual functions*	*DEX IC + Workshop lecturer*
12:00 – 12:30	*Break*	
12:30 – 14:00	*Chapter 3 - familiarization with suitable and inappropriate models for 3D printing, demonstration of slicing of prepared models, materials that can be used in 3D printing*	*DEX IC + Workshop lecturer*
14:00 –16:00	*Chapter 4 - creation of own model with support of the lecturers*	*DEX IC + Workshop lecturer*
16:00 –17:30	*Chapter 5 - final preparation for printing – (convert to code suitable for printing), printing of a simple model*	*DEX IC + Workshop lecturer*

Module 3.3. - 2DESIGN&PLAY

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 5

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment.

Skills targeted:

1. development of digital competences
2. developing their creativity
3. generating ideas - thanks to the experience gained
4. strengthening self-confidence

Module contents: Introduction to PCB, participants are formed only by an advance group (work is not suitable for basic group); sample program for design; creation of simple models, creation of printed circuit boards

Outputs:

1. Participants know the basics of working with the printed circuit design program.
2. The participant knows the safety rules associated with working with the PCP printer.
3. The participant creates a simple model that can be printed.

Teaching methods: experimental learning sessions with the digital technologies, individual/group workshops with experts

Equipment needed: pc, projector, solders, Voltera V-One, oscilloscope, voltmeter, digital solders, starter bundle, computer program Eagle

Time allowance: 7 hours

Time schedule of lesson:

Timing	Activities	Major role
09:00 – 09:30	Introductory speech, presentation - presentation of the whole day program, what is PCB printing, examples and demonstrations of use	DEX IC
09:30 – 10:15	Chapter 1 - Introduction to PCB design, introduction to CAD program	DEX IC + Workshop lecturer
10:15 – 12:15	Chapter 2 - working with a prepared schema, demonstration of options, familiarization with basic functions	DEX IC + Workshop lecturer
12:15 – 12:45	Break	
12:45 – 15:30	creation of a custom CAD model - with individual support from the lecturer	DEX IC + Workshop lecturer
15:30 – 17:30	Chapter 3 -Demonstration of "board" (lecture, cutting, printing, chemical treatment)	DEX IC + Workshop lecturer

Module 4 - 2INVENT

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 6

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment.
6. Most participants master the basics of robotics (with simple IoT kits) and basics of 3D design (basic in Tinkercad, advance in Fusion 360).
7. The advance group has basic experience with PCB design.

Skills targeted:

1. development of creativity
2. generating your own entrepreneurs of ideas
3. problem sensitivity
4. generating your own ideas
5. developing entrepreneurial and innovative culture

Module contents: Introduction to entrepreneurship; who and why; mapping current ideas among participants; generating other own ideas; practical exercise's; team building; work in teams; final team ideas for further work; work supervised and supported by mentors

Outputs:

1. Participants will create a list of entrepreneurial plans.
2. The participants created those in which they will work together during other parts of the program.
3. Each team has one or two entrepreneurial plans that will be developed in the canvas model.

Teaching methods: individual/group workshops with experts

Equipment needed: pc, projector, worksheets

Time allowance: 3 hours

20

Time schedule of lesson:

Timing	Activities	Major role
18:00 – 18:20	*Introductory speech – entrepreneurship – what it is, what are the possibilities, what are its assumptions*	*Mentor*
18:20 – 18:50	*Introductory exercises - own ideas, themes around us, current needs and how to use them*	*Mentor*
18:50 – 19:30	*Second exercise - Developing other ideas through simple exercises (for example: Thought maps, creative alphabet, Looping)*	*Mentor*
19:30 – 19:45	*Breakdown into teams - according to your own preferences, the similarity of ideas, through the game (always absolutely voluntary, it is possible to leave the team and set out on their own way)*	*DEX IC + Mentors*
19:45 – 20:00	*Discussion in teams*	*Mentor*
20:00 – 21:00	*Concluding exercises aiming at giving each team one to two ideas for further work*	*Mentor*

Module 5 – 2DEFINE

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 7

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment.
6. Most participants master the basics of robotics (with simple IoT kits) and basics of 3D design (basic in Tinkercad, advance in Fusion 360).
7. The advance group has basic experience with PCB design.
8. Participants have generated their entrepreneurial ideas.
9. The participants created small groups in which they will further elaborate the ideas for which they decided.

Skills targeted:

1. teamwork
2. strategic thinking
3. organizing
4. generating ideas
5. communication
6. interpersonal relationships
7. motivation
8. flexibility
9. peer-to-peer learning/support
10. project management
11. persuasion
12. persistency
13. developing entrepreneurial and innovation culture

Module contents: Getting familiar with the business canvas tool and its capabilities; using individual teams on their own canvas models; creating a final idea for the 2CREATE phase; work with mentor support; presentation of own canvas models and discussion

Outputs:

1. *Participants will be able to create their own business canvas model.*
2. *Each team will have their own business canvas model.*

Teaching methods: *individual/group workshops with experts , working with entrepreneurial model canvass*

Equipment needed: *pc, projector, worksheets*

Time allowance: *3 hours*

Time schedule of lesson:

Timing	Activities	Major role
18:00 – 18:30	*Introductory speech, Presentation - What is Business Canvas and how is it used? How to proceed, in what steps?*	*DEX IC*
18:30 – 20:00	*Individual teamwork's on your own canvas model - support for lecturer and mentor*	*DEX IC*
20:00– 21:00	*Presentation of individual canvas models + discussion*	*DEX IC*

23

Module 6 – 2CREATE

Target group:

1. *Secondary students (age 17) - mainly students of industrial schools and grammar schools*
2. *TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering*
3. *Students with basic technical skills - programming, 3D design, etc.*

Order number of the hour: 8

Up to now acquired skills and competencies:

1. *Participants know what the program is and have a general idea of how it will be.*
2. *The participants were motivated with two mentors (entrepreneurs) in the digital technology field.*
3. *Participants have attended an introductory lesson, which was mainly used to motivate them.*
4. *During the second module, participants learned about the FabLab's equipment and its use.*
5. *Participants know the basic principles of working with equipment.*
6. *Most participants master the basics of robotics (with simple IoT kits) and basics of 3D design (basic in Tinkercad, advance in Fusion 360).*
7. *The advance group has basic experience with PCB design.*
8. *Participants have generated their entrepreneurial ideas.*
9. *The participants created small groups in which they will further elaborate the ideas for which they decided.*
10. *Participants have their own business canvas model.*
11. *Participants have the final idea to implement.*

Skills targeted:

1. *developing their pro-activity*
2. *developing their teamwork*
3. *organizing*
4. *leading*
5. *self-initiative*
6. *development of digital competences*

Module contents: Individual work with partial mentor support; access to the individual equipment for each team separately; free production time in the FabLab on the basis of pre-ordered time; technical support

Outputs:

1. *Each team has its own prototype / product*

Teaching methods: experimental learning sessions with the digital technologies

Equipment needed: *pc, projector, IoT kits, solders, Voltera V-One, oscilloscope, voltmeter, digital solders, starter bundle, computer program Eagle, computer programs (Tinkercad – for basic, Fusion 360 – for advance), 3D printers*

Time allowance: *8 hours*

Time schedule of lesson:

Timing	Activities	Major role
00:00 – 00:00	*The individual work of the individual teams, the time allowance for each team is 8 hours and can be increased after an agreement with the person responsible*	*DEX IC*

25

Module 7 – 2PRESENT

Target group:

1. Secondary students (age 17) - mainly students of industrial schools and grammar schools
2. TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering
3. Students with basic technical skills - programming, 3D design, etc.

Order number of the hour: 9

Up to now acquired skills and competencies:

1. Participants know what the program is and have a general idea of how it will be.
2. The participants were motivated with two mentors (entrepreneurs) in the digital technology field.
3. Participants have attended an introductory lesson, which was mainly used to motivate them.
4. During the second module, participants learned about the FabLab's equipment and its use.
5. Participants know the basic principles of working with equipment.
6. Most participants master the basics of robotics (with simple IoT kits) and basics of 3D design (basic in Tinkercad, advance in Fusion 360).
7. The advance group has basic experience with PCB design.
8. Participants have generated their entrepreneurial ideas.
9. The participants created small groups in which they will further elaborate the ideas for which they decided.
10. Participants have their own business canvas model.
11. Participants have the final idea to implement.
12. Participants have the final „products".

Skills targeted:

1. developing their self-confidence
2. developing their motivation
3. developing their teamwork
4. organizing
5. interpersonal relationships
6. communication
7. self-presentation
8. persuasion

Module contents: Current trends in presentation; expert presentation for presenting idea/pitching, group work on their presentations of their ideas, 1st trial of presentations with feedback from expert

Outputs:

1. Each team will have a ready presentation for the final evening

Teaching methods: *presentation techniques*

Equipment needed: *pc, projector, worksheets*

Time allowance: *3 hours*

Time schedule of lesson:

Timing	Activities	Major role
18:00 – 18:30	Introductory speech, what is good about how to present the product, what are current trends in presentation, what is most important to mention and what to skip	DEX IC + Mentor
18:30 – 19:00	Unforgettable conditions of successful presentation - objectives of the presentation: target group of participants, presentation structure, presentation site and environment, time and duration of presentation, visual and technical aids, presentation and presentation	Mentor
19:00 – 20:00	Practical exercises Creating your own basic presentation, choosing techniques, with support from mentor	Mentor
20:00 – 21:00	First presentation + discussion - Feedback from other participants and mentor	DEX IC + Mentor

Module 8 – 2SUCCEED

Target group:

1. *Secondary students (age 17) - mainly students of industrial schools and grammar schools*
2. *TUL students (ages 19-29) - above all students of the Faculty of Mechatronics and Informatics and Faculty of Mechanical Engineering*
3. *Students with basic technical skills - programming, 3D design, etc.*

Order number of the hour: 10

Up to now acquired skills and competencies:

1. *Participants know what the program is and have a general idea of how it will be.*
2. *The participants were motivated with two mentors (entrepreneurs) in the digital technology field.*
3. *Participants have attended an introductory lesson, which was mainly used to motivate them.*
4. *During the second module, participants learned about the FabLab's equipment and its use.*
5. *Participants know the basic principles of working with equipment.*
6. *Most participants master the basics of robotics (with simple IoT kits) and basics of 3D design (basic in Tinkercad, advance in Fusion 360).*
7. *The advance group has basic experience with PCB design.*
8. *Participants have generated their entrepreneurial ideas.*
9. *The participants created small groups in which they will further elaborate the ideas for which they decided.*
10. *Participants have their own business canvas model.*
11. *Participants have the final idea to implement.*
12. *Participants have the final „products".*
13. *Participants have a final presentation of their entrepreneur plan.*

Skills targeted:

1. *self-confidence*
2. *motivation*
3. *teamwork*
4. *organizing*
5. *interpersonal*
6. *relationships*
7. *communication*
8. *self-presentation*
9. *persuasion*

Module contents: Introductory speech; the presentation of the project and its outputs to date; introduction of individual teams; presentation of individual teams; announcement of the winners

Outputs:

1. *Each team will have to present their entrepreneurial plan*
2. *The best projects and the absolute winner will be selected*

Teaching methods: *elevator pitching, presentation techniques*

Time allowance: *3 hours*

Time schedule of lesson:

Timing	Activities	Major role
18:00 – 18:15	*Introductory speech; the presentation of the NGS project; introduction of individual teams*	*DEX IC*
18:15 – 19:45	*Presentation of entrepreneurial plans of individual teams*	*DEX IC*
19:45 – 20:15	*Break / vote on the best projects*	*DEX IC*
20:15 – 20:50	*Announcement of the winners*	*DEX IC*
20:50 – 21:00	*Official end of the event, thanks to all participants*	*DEX IC*