

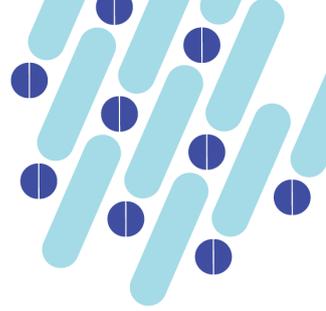
AllS training program

Student Guide



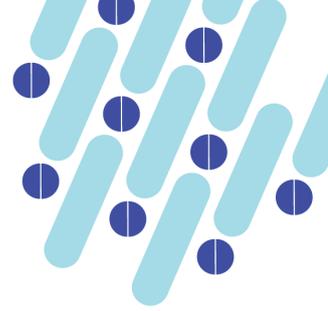
Artificial Intelligence, Innovation & Society, the future of medicine – AllS





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1 Introduction



Welcome to the AIIS Training Program!

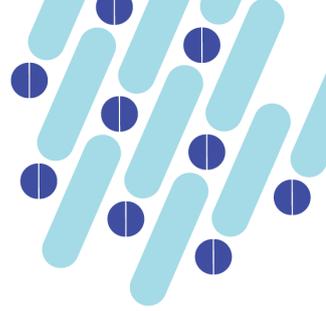
The objective of this guide is to provide you with the necessary information you need to know about the **AIIS learning Program** in which you have enrolled.

The AIIS Training Program is part of the Erasmus+ AIIS project, Artificial Intelligence, Innovation and society. The project is coordinated by the Faculty of Medicine and the Employment and Entrepreneurship Service of the University of Salamanca. Five countries participate in this project: Finland, Holland, Belgium, Greece and Spain. Finland is represented by the University of Turku and Turku University of Applied Sciences. Belgium is represented by the University of Mons. Holland by the GoDataDriven Company. Greece is represented by the University of Thessaly and the company Scify. Spain is represented by the University of Salamanca, the CIBER Research Center and the company MEUS.

The AIIS project is aimed at medical students with the aim of bringing them closer to Artificial Intelligence and being able to apply soft skills in their professional careers, both highly demanded and necessary in the medical sector.

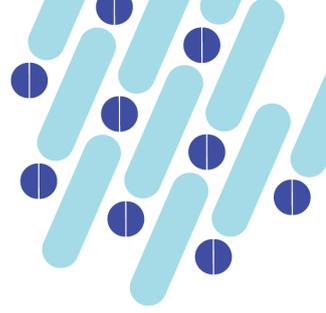
For this reason, we are delighted to accompany you on this unique training opportunity, whose access at this time is exclusively aimed at medical students from the five universities that make up the consortium.

Through the research that has been carried out at the beginning of the project, we have verified the importance of both areas, artificial intelligence and soft skills, in the field of medicine, as well as the training gap that currently exists within the curriculum of medical studies at European level. Hence, the AIIS Training Program is made up of three main activities:



The content has been tailor-made according to the requirements presented within the labor market of the health care sector.

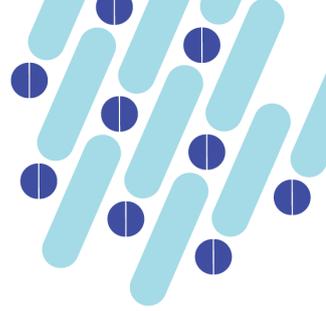
The AIIS Team hope you will find this learning experience very useful to you.



2 Abbreviations

MCs: Micro-credentials

CPS: Collaborator points

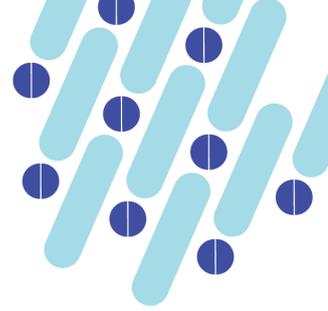


3 Objectives and benefits

The main objective of this program is to get closer to artificial intelligence and soft skills application in the medical sector and in this way cover an existing training gap in both subjects, verified through previous research carried out by the team of this project.

The experiences you will obtain through the AIIS Program are:

- Being one of the first to be educated on Artificial Intelligence in medicine.
- Cultivate the Soft Skills you will need to apply in practicing medicine.
- Apply linguistic skills and experience a multi-cultural study environment.
- Network with 5 international universities, professors and medical experts across Europe.
- Familiarise yourself with the use of new technologies such as Virtual Reality.
- Be the first to learn via an EduVerse environment.



4 Methodology

The AIIS Program, consisting of both theoretical and practical components is 100% online.



- The **theoretical** artificial intelligence and soft skills components of the program are delivered through the **AIIS EduVerse** virtual online collaborative learning environment.
- The **practical** Challenges component gives you the opportunity to work in group format with a dedicated mentor through well-established connectivity technologies such as Teams or Zoom.

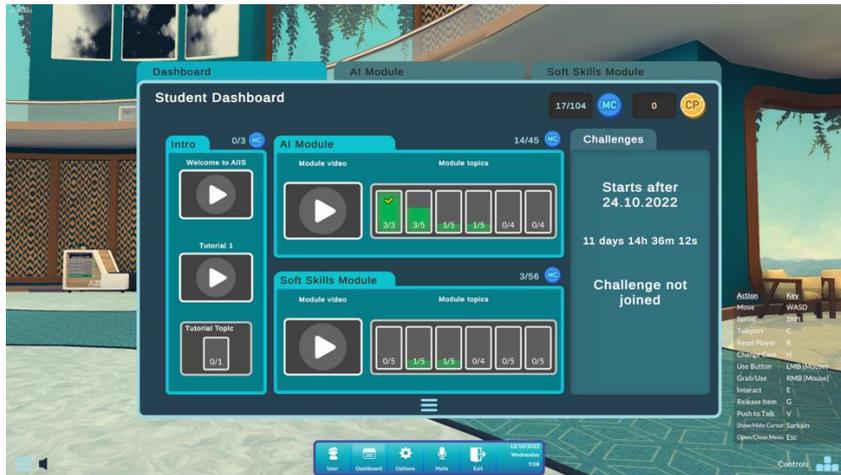
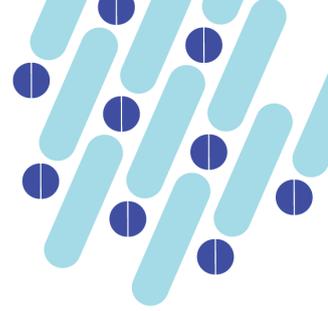
To successfully complete the AIIS program you must:

1. Complete all AI tasks (collect all micro-credentials)
2. Complete all soft skills tasks (collect all micro-credentials)
3. Earn 10 collaborator points
4. Complete 1 group challenge
 - a. Challenge selection must be done between 24.10.2022 and 1.11.2022
 - b. Your challenge presentation is on 19.12.2022

4.1 Online theory in the **AIIS EduVerse**

The study material is designed in such a way that you can complete it in an asynchronous fashion – at your own pace in any order.

While inside the AIIS EduVerse, you will be able to open your **dashboard** at any given time for a snapshot of your study progress – the **dashboard** continuously updates your progress as you complete the various learning tasks. The **dashboard** also provides access to useful explanatory videos about the course and how to interact with the virtual environment. Here are some images of the dashboard main screen and the AI part:



Dashboard – Main view



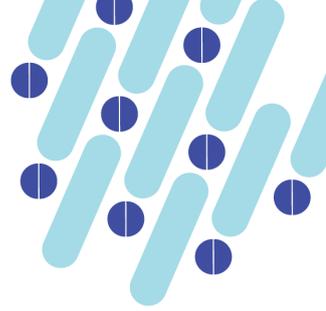
Dashboard – AI module view

4.1.1 Study material content

The theory aspect of the program is divided into artificial intelligence and soft skills. Each part comprises six modules (or topics) that each contain a number of tasks for you to complete:

Artificial Intelligence topics

- M1. Introduction to Artificial Intelligence
- M2. Expert systems and their role in the healthcare sector
- M3. Introduction to machine learning
- M4. Machine learning in the healthcare sector



M5. Introduction to machine vision

M6. Image recognition in the healthcare sector

This video: presents the content of the AI topics in greater detail

Soft Skills topics

M1. Self-knowledge and initiative

M2. Capacity to adapt to different situations

M3. Communication

M4. Teamwork

M5. Work Organization

M6. Work Ethic

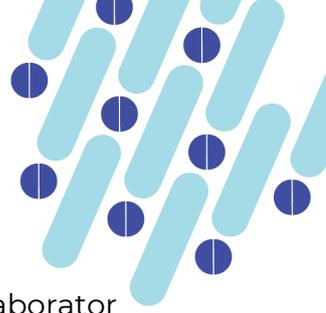
This video: presents the content of the soft skills topics in greater detail

In each of the topics you will find:

1. An **unlock task:** this is an initial task that you must complete at the beginning of each topic so that you can access the rest of its content.
 - a. If you do not complete it successfully, the remaining content will still become available to you – you will be able to return to the unlock task at any time after your first attempt.
2. **Tasks and theory:** All tasks have an assigned number of micro-credentials (MCs). The MCs for a task will be granted when you successfully complete a task. To finish a topic, all tasks for that topic (including the unlock task), must be completed.

NOTE:

- All tasks have an associated theory explanation in video format
- You will be allowed to repeat a task as often as you wish
- You cannot earn MCs more than once for the same task
- Once you have earned the MCs for a task, you cannot lose them
 - Even if you repeat the task and get it wrong.
- When doing tasks, correct and incorrect answers will be indicated.
- A task is complete when all task answers are correct
 - You will only earn MCs for completed tasks.
 - All earned MCs will appear on your dashboard.



- 3. Collaboration opportunity:** You must earn a total of 10 collaborator points (CPs) throughout the theory component in the **AIIS EduVerse** to successfully complete the theory component. To earn CPs, you must join a task that somebody else has started.

NOTE:

- Whenever somebody starts a task, 2 collaborator seats become available.
 - If you are in a collaborator seat when a task is completed successfully, you will earn the CP.
 - Even if you join after the start of a task
 - You can only earn one CP per successfully completed task
 - You will not be visible to other users when both collaborator seats are occupied.
- 4. Reflection zones:** These are optional activities and do not happen for every task. Reflection zones become available when you successfully complete all tasks of a topic. Reflection zones are scattered throughout the **AIIS EduVerse** virtual environment. We strongly encourage you to engage in the various reflection zones you will encounter as they let you consolidate everything you learned in the topic.
- 5. Student material:** You can download the theoretical content of each part. Available in Spanish, French, Greek, Finnish and English.

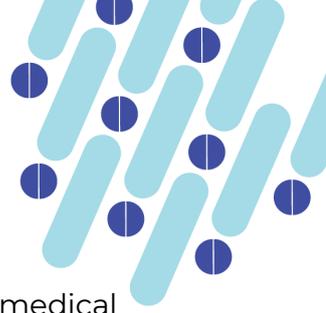
This video: gives an overview of the AIIS Program

4.2 Challenges component

The challenges component is a group activity where you will work together with students from other universities to solve real challenges that have been raised by medical professionals.

There are 10 challenges to choose from and between 24.10.2022 and 1.11.2022 you should select the challenge that interests you most. Challenge selection happens inside the **AIIS EduVerse** virtual environment – all other work with the challenge happens outside the virtual environment. Once a challenge has enough participating group members, the mentor (a university professor or industry professional) who is assigned to your chosen challenge will contact you via email to set up a kick-off meeting for working on the challenge.

For the challenge, you will collaborate in groups of approximately 10 students to solve a medical problem using an online machine learning tool. It will offer you an opportunity to develop both the technical and soft skills you have studied during the course.



You will work with real-world data and provide insight on a genuine medical problem. For example, determining which factors influence the re-admission probability for patients of the psychiatric ward.

This video: gives an overview of the challenges component of the AIIS Program

4.2.1 The challenges

The **AIIS EduVerse** virtual environment has a roof-top area where you will find 10 different challenges to choose from. Here are the challenge topics:

- Mania
- Heart Attack
- Framingham Heart Study
- Maternal Health Risk
- Heart Failure
- Hepatitis C
- Stroke
- Diabetes
- Breast Cancer
- Fetal Health

To complete the challenge component, each group will receive:

- An anonymised medical dataset
- A mentor that can offer guidance on the dataset/challenge
- A question/problem that needs to be solved
- Access to an online tool to help process your challenge data

We encouraged you to look beyond the given problem and explore what other possibilities the dataset presents.

4.2.2 Tooling

You will be granted access to H2O (<https://h2o.ai/>). This tool allows AI models to be trained without having coding experience. It can be used to investigate the data, answer the given problem and explore any other ideas the team has regarding the data.

A tutorial on using H2O is included.

4.2.3 Support

A mentor is assigned to each challenge.

If you have questions about the challenge, or interpreting the data, you can reach out to the mentor.

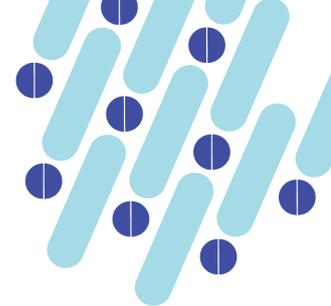


For technical questions you can reach out to jameshayward@godatadriven.com from Go Data Driven.

4.2.4 Deliverables

At the end of the course (19.12.2022), your group will present your findings.

Not being able to "solve" your challenge may be a valid finding, so it is important that you also describe your approach to solving the problem.



5 AIIS EduVerse virtual environment

The AIIS EduVerse is a collaborative virtual learning environment where you will be able to move around with students from all over Europe and the rest of the world while collaborating on various tasks involving AI and soft skills in the health care sector. In this section of the document you will find instructions on how to access the AIIS EduVerse, and move around and interact within the AIIS EduVerse.

Although **it may take some practice** to get used to working in the EduVerse, we truly hope that you will enjoy this new and exciting way to learn. You are the first in the world to experience such a platform with its unique pedagogical approach.

5.1 Enrolment and access

In order to start using the AIIS EduVerse, you must enrol to the AIIS Program with your home university. If you have enrolled, you will receive a welcome mail on 17.10.2022 with the following contents:

- This document
- A download link for the AIIS EduVerse virtual collaborative learning environment
- A token that will grant you access to the AIIS EduVerse

Once you have received the welcome mail, you should follow these steps:

1. Click the link and download the AIIS EduVerse zip folder for your operating system (Mac or Windows)

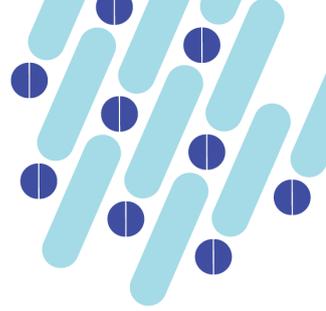
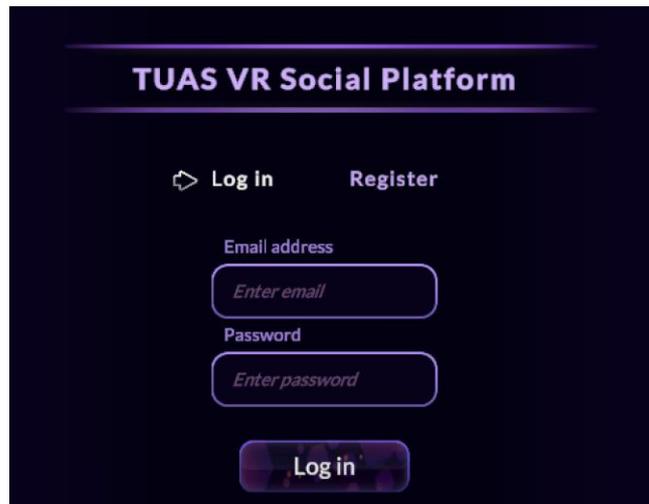
*Please be aware that the download is approximately **2GB** in size*

2. Place the zip folder where it is most convenient for you within your computer directory structure.

To have an optimal user experience, we highly recommend using a mouse (laptop trackpads are clumsy to use for the AIIS EduVerse).

If you are using a laptop, please make sure to plug in the power adapter.

3. Unzip the folder and launch the AIIS EduVerse
 - a. For Mac users... double-click the AIIS icon file
 - b. For Windows users...
 - i. Open the *TUAS_VR_Social_Platform...* folder
 - ii. Double-click the *TUAS VR Social Platform.exe* file
4. You will see this screen where you should select the **Register** option (on the top right)

TUAS VR Social Platform

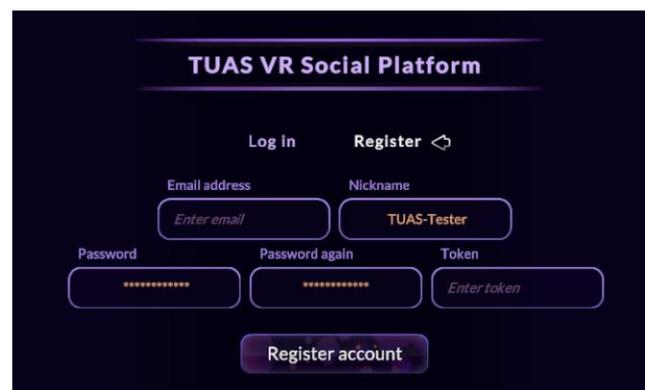
Log In Register

Email address
Enter email

Password
Enter password

Log in

5. You will now be presented with this registration screen:



TUAS VR Social Platform

Log in Register

Email address Nickname
Enter email TUAS-Tester

Password Password again Token
***** ***** Enter token

Register account

- a. Fill in the different fields
 - i. The *Nickname* is what other users in the EduVerse will see
 - ii. DO NOT FORGET YOUR PASSWORD – there is NO option to recover it
 - iii. The *Token* is the one you received from your university in your welcome email
 - b. Select the **Register account** button
 - i. You will only fill this screen once
 - ii. From this point on, you will log in using the email and password screen from point 4
6. Once you log in, you will see a screen that lets you set the user mode
- a. We recommend **first-person**
 - b. This can be changed while you are in the AIIS EduVerse



At this point, you will enter the AIIS EduVerse virtual learning environment. You will first be in a tutorial room where you can practice the primary EduVerse interactions – there is an option to skip the tutorial. However...

We strongly recommend to complete everything in the tutorial scene.

You can follow the on-screen prompts to make yourself familiar with the environment and how it works.

Once you have completed all the tutorial steps, you will be able to leave the tutorial scene up the stairs to the ground floor of the learning environment ...

WELCOME TO THE AIIS EDUVERSE

The primary interactions within the AIIS EduVerse are briefly discussed below.

5.2 The AIIS EduVerse layout

In the EduVerse, you and all other users are represented by avatars, only identified by the nickname you entered earlier. The AIIS EduVerse has 4 floors that are arranged as follows:

1. Basement – Tutorial (this one can be skipped)
2. Ground floor – Artificial intelligence (theory you must complete)
3. First floor – Soft skills (theory you must complete)
4. Roof top – Challenges selection (10 topics you must select one of)

You are able to move anywhere in the environment at any time.

5.3 How to move around

Moving around the environment is best enjoyed with a keyboard **and mouse** combination – *laptop trackpads work, but are clumsy to use for the EduVerse.*

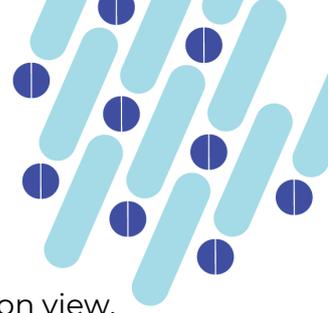
The mouse controls your direction and the keyboard buttons move your avatar forward, backward and side-to-side as follows:

- WASD (for QWERTY keyboards)
- ZQSD (for AZERTY keyboards)
 - W / Z = forward
 - S / S = backward
 - A / Q = left
 - D / D = right

NOTE

The **Esc** key toggles your mouse between direction control and interaction.

- **Direction control** mode lets you control the direction you are looking
- **Interaction** mode lets you interact with menus and objects (such as your dashboard and task tablets)



Here is an image of the EduVerse environment from you avatar first-person view.



Section of the AIIS EduVerse environment

To do a task, you must move your avatar to one of the task dispensers (shown below) and select the task you wish to do.

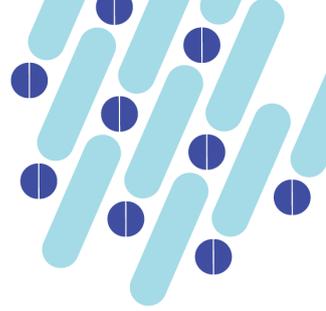
5.4 How to start tasks

Every topic has a task dispenser and to select one of the topic tasks:

1. Move to a dispenser
2. *Press the Esc key to toggle to interaction mode*
 - Steps 3 and 5 can be done without toggling the mouse
3. Move your mouse crosshair over a task
4. Press and hold the left-mouse-button (LMB) until the task ribbon completely changes colour
 - At this point the dispenser will release a task tablet
5. Move your mouse crosshair over the tablet that the dispenser released and press the right-mouse-button
 - This brings the tablet to your avatar's hands and you can walk around with the tablet in your hands
6. Press **E** to start doing the task

Every task will have a short description and instruction set to help you get started. You can complete all tasks using only the mouse.

Here is an image of the task dispenser and task tablet that has been released:



Task dispenser with task tablet

NOTE

The tablet will warn you if you are too close to somebody else also doing a task (this has to do with the space required for collaboration) – also, the circle around you will be red when you are too close. Simply move further away from others, the circle will become blue and you will be able to start your task.

This video: explains how to function within the AIIS EduVerse

5.5 How to interact with other students

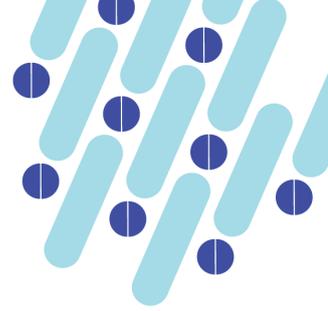
While in the AIIS EduVerse, there are two ways to interact with other students:

1. Talk to them in open spaces (anywhere in the EduVerse virtual world)...
 - a. Walk close enough to somebody's avatar
 - b. Press-and-hold the **V** button on your keyboard while talking

NOTE: you must hold the V button down while talking and release it only when you have completed what you wish to say (like using a walkie-talkie).

2. Talk to them while in collaborator mode...
 - a. Find somebody who has started a task
 - b. Walk into the circle that surrounds them
 - c. Press the **Collaborate** button
 - d. Talking is the same as in step 1 ... using the **V** button

Here is a picture of somebody doing a task (from your avatar first-person view):



First person view of a task on the task tablet

5.6 How to interact with your tutor

Every university has one tutor assigned to assist you in the EduVerse. When your tutor is in the AIIS EduVerse, you can interact with them in the same fashion as with other students in open space. Your tutor will inform you the dates and times they will be available to join you in the AIIS EduVerse.

Your tutor will not start any of the tasks, but you may ask them to collaborate on a task that you have started.

5.7 Micro-credentials and collaborator points

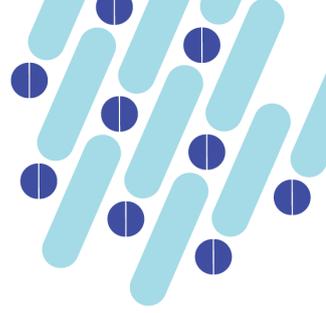
Each task has a number of micro-credentials (MCs) associated with them. The MCs are used as a status indicator for your study progress. To complete the AIIS program you must:

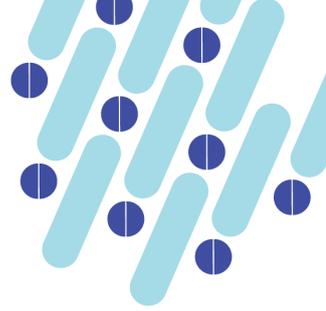
1. Complete all AI tasks (collect all MCs)
2. Complete all soft skills tasks (collect all MCs)
3. Earn 10 collaborator points
4. Complete 1 group challenge
 - a. Challenge selection must be done between 24.10.2022 and 1.11.2022
 - b. Your challenge presentation is on 19.12.2022

5.8 Summary of usefull tips

- Plug in the **power adapter** if you are using a laptop
- Make sure to use a **mouse** and keyboard
- Do NOT skip the **tutorial**
- Learn how the **Esc** key works (it is a critical usability key)
- Use your **dashboard** to view your progress and access informative videos
- Press **AND** hold the **V** key to talk with others in the AIIS EduVerse

This video: gives an overview of the AIIS Program





6 Schedule

The program begins on October 17, 2022 and will end on December 19, 2022.

ACTIVITY	October 2022																															November 2022																															December 2022																		
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19																	
Online program: AI and Soft Skills modules	[Green blocks]																																																																																
Challenge selection	[Pink blocks]																																																																																
Challenge activity																																[Blue blocks]																															[Blue blocks]																		
Final presentations																																																															[Yellow block]																		

7 Certificates and ECTS

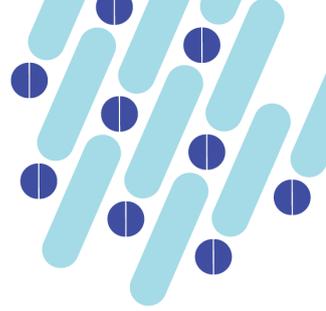
When you have successfully completed ([§4 gives the completion criteria](#)) the AIIS Program, you will receive a certificate of attendance signed by the five universities and four industry partners of the consortium.

Your university may offer 3 ECTS (credits) for successfully completing the AIIS Program. Please consult your assigned [university tutor](#) for more information.

8 Course tutors

You will have a tutor at your home university who will accompany you during the program. Please do not hesitate to ask questions or send your concerns.

University	Tutor	Contact
University of Salamanca (USAL)	Chus Santos	aiis@usal.es
University of MONS (UMONS)	Rania Aro	rania.aro@umons.ac.be
Turku University of Applied Sciences (TUAS)	Teppo Saarenpää	teppo.saarenpaa@turkuamk.fi
University of Turku (UTU)	Laura Mairijona	laura.j.mairinoja@utu.fi
University of Thessaly (UTH)	Vassiliki Softa	vsofta@med.uth.gr



9 Technical support

For technical support regarding the **AIIS EduVerse**:

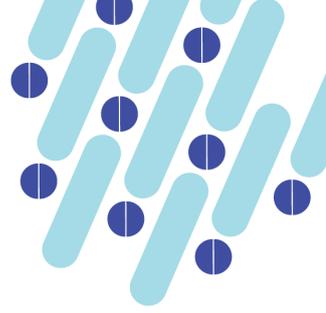
Werner Rayse: werner.ravyse@turkuamk.fi

If you need help navigating or engaging with the AIIS EduVerse, please contact your tutor first.

For technical support using the **H2O tool** in the challenges component:

James Hayward: jameshayward@godatadriven.com

If you need help understanding your challenge or the associated data, please contact your mentor first.



We hope you will very much enjoy this learning adventure!

AIIS Team



<https://aiis.usal.es/>