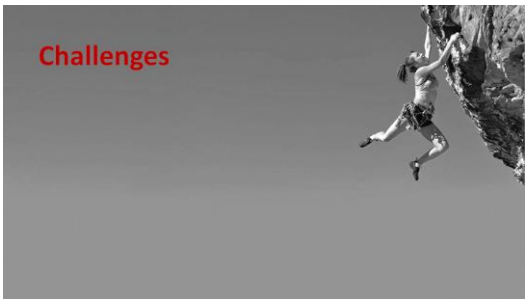
0 Preface: In open learning students define their own learning outcomes, even build their own curriculum by combining multiple semesters of open learning (Personalized Study Program). Needless to say it has to be meaningful and assessable. Besides that it takes an increasing amount of self regulation from you, the student.
To increase self regulation and make sure the most effective way of working is known, this (short) document is created as a student guide for Open Learning. Specially for students who are going through open learning for the first time. **Have fun**!

0.1 coaches and knowledge: During a semester you (and the challenge group you're in) will have a personal coach. This coach has personal talks, helps you and the group, gives feedback on your work and facilitates. To be short, ask them anything. There is also a second coach. They will be at the sprint demo's and will be the second assessor. Sometimes there even is a third coach in special circumstances, for example when extra personal coaching is needed. All the coaches have a personal page in the canvas course in which you can see who they are and what their expertise is. The coach can also help you to find the right experts.

02 working environment: A L.M.S. (Learning Management System), Canvas, is used in a somewhat peculiar way. Since all of you have a personal learning journey, you all get a personal course which will reflect your actions. It will work as a personal certified portfolio in which all your deliverables are graded on the ICT competence framework.

> **What's in it for me:** Working consistently in Canvas will make sure you build a powerful portfolio. Besides that It has tooling to give specific feedback which will always be visible. So the more you turn in the more help you will get!

1 Challenges: Open Learning could also be described as **challenge based learning.** The learning journey in a semester starts with selecting one (or more) challenges to work on which match your learning personal learning objectives. Challenges are used to guide the *learning process*, make it *meaningful,* provide a *context* and a *stakeholder* with a real life challenge. **So everything done in open learning will be for real!**



1.1 A challenge: is a real life issue from a stakeholder (usually a partner in education), which goes from solving an innovation question to creating new business opportunities. This challenge has to be open to match the learning objectives of the students, ergo, it's not something like *"create this app for Android, here are the specs".*

A challenge always contains:

- An issue to be solved (or innovation question)
- A real-world context in which the problem lives, for example Healthcare or Art
- A technological context, for example AI, Blockchain or Webtech

1.2 Choosing a challenge: Before an Open learning semester starts we ask that you start thinking about how and in which area you want to develop yourself in the coming semester, what your learning objectives will be. For this an intake is organized. And since challenges are organised in terms of, challenge, context and technology, this will give a starting point.

- **Starting from technology:** This is a very often used starting point. If you want to learn something about a specific technology like Docker, Blockchain or Neural Networking, this gives a specific filter over the challenges.
  This starting point can also be broader, like I want to develop programming or UI skills. Both of these starting points will narrow the challenges down. Most challenges have multiple technological entry points.
- **Starting from a context:** Since most challenges have multiple technological entry points, it can be a good idea to start from a context that can be very meaningful for you. Contexts like education, robotics, art or healthcare can be very stimulating. These also provide a filter for the possible challenges.
- **Challenge as starting point:** It could be you have the perfect challenge in mind. If it exists this is fine. If it doesn;t there is the opportunity to **define your own challenges**. However there are certain rules attached to that.
  1. The challenge description has to be approved.
  2. There has to be a stakeholder (Preferably a partner)
  3. You have to pitch the challenge to other students

Pitches and the challenge market: At the start of the semester there will be a pitch market of all the challenges. Considering the number of challenges it's impossible to see all pitches, so make a wise selection. In order to do so, the challenges will also be all online in the Canvas course. The end result will be groups with fitting challenges.

What's in it for me: Taking the time to select or find a fitting challenge will give you a context that is motivating and fun to work on with fellow students with the same interessests. So give it enough attention.

2 sprints: The semester is organized in (scrum) sprints of which everyone will end with a demo. Make sure your stakeholder is around at the designated demo's. Sprint planning is one of the things that will guide you. So make SMART sprint plannings every 3 weeks. There are also workshops on scrum available. In this respect always check your competence document of what you want to achieve and make sure this stays in focus.

One of the guiding documents during the semester is your competence document (This is described in detail in the Canvas course).
A competence document shows your starting point in terms of competence development and how far you are in accomplishing this, so its a document under construction.. **It is reworked every sprint** (in retrospectives, personal as well as groupwise) and if you use assignments wisely, it will show your progress and how far you've developed. When the challenge is selected the first thing is to create a starting version of this document.

> **What's in it for me:** An up to date competence document will give guidance where you are and how to develop yourself. If you handle the assignments in the correct way it will also show which competences you're developing.
> A solid sprint planning will guide you through the sprint and the backlog will show tasks to be done. Because virtually every student has their own trajectory through the semester there is no master plan for all the students (besides some basic growth rules). So the sprint planning will guide you. Make sure to discuss it with the coaches!

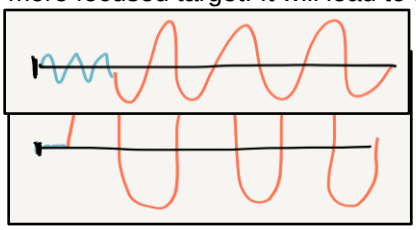
3 Assignments and criteria: In the real world, work breakdowns are used to make large tasks more comprehensible. So a challenge would be brought down in smaller compact and overseeable tasks, which are basically assignments. Usually criteria are attached to tasks, which will define the definition of done. (Basicly the criteria have the form of student defined learning outcomes.)

In open learning, assignments and criteria in the learning system are used for this. ***This will give the coaches the opportunity to give feedback on your work.*** Assignments can be turned in until you are satisfied with the grading and all the feedback is resolved. The assignments will in the end be used to assess your work based on the competence framework (See competence framework and KPI's and Also recurring assignments further in this document).

> **What's in it for me:** Assignments function as a work breakdown of the challenge. So it will decompose the challenge into smaller meaningful tasks. If you just begin somewhere or worse, start coding blindly, you'll be shooting with buckshot in the dark. This means all the design and research is done ad hoc on the fly without any direction. So if the red line in this figure is the

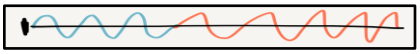
amount of work needed, not doing a work breakdown leads to a lot of unnecessary work, no direction and a lot of turns needed to stay on track when a wrong road has been chosen.

Taking time for the work breakdown (usually after every sprint), it will give guidance context and a more focused target. It will lead to a picture more looking like this:



As you can see less deviation and more focus.**The description of the assignment will hold this task.**

However, tasks do need focus too. This is done by creating **criteria** with every assignment. These describe the definition of done. Or in other words the describe when is the assignment completed on the level good. More focus means the graph will look like this:



So the more focus the better and easier the work. **Especially if it is debriefed to the coaches and stakeholder.**

In wrapup:

- *Assignments are a work breakdown of a challenge. During time you get more grip and more assignments will arise. Together they describe what has to be done for the challenge*
- *Criteria are for an assignment what assignments are for a challenge. They formulate the definition of done on a level good.*

In the end feedback will be on how well the criteria are met. So it will also help you improve, see creating assignments and criteria in Canvas in your personal course.

TIP*: *Don't reverse engineer this. It will lead to a meaningless exercise which will feel as a bad chore. Besides doing this after work has been done won't give the benefits described above.
TIP*: *Balance the number of breakdown tasks and thus the number of assignments. Try to cluster wisely it will make sure you have a better overview.
A good way to look at this is the competence framework, or basically the product life cycle. In the most elementary form an assignment will have research or Analysis, based on which an Advice is given, which is the basis for a Design, which will be Created and Maintained.

3.1 creating assignments and criteria: When you first get a personal course, there is a video in there which will tell you how to (technically) handle assignments in Canvas. But that's only the technical stuff. How can you define a good breakdown item that can work as a guiding text in an assignment?

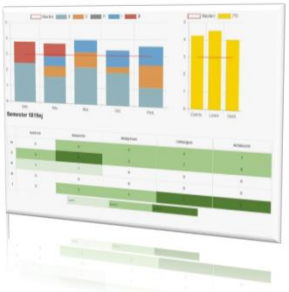
- Don't make it too long, a few sentences is usually more than enough because the criteria will articulate it.
- It should also be aimed at the stakeholder, Why are you doing this assignment and what is the wanted outcome
- A user story (Scrum) could be a good source of inspiration.
- Don't create too little or too much assignments (gives a lot of overhead). See the top above to use the product lifecycle as a guideline.

Formulating criteria is the next step.. They should articulate what the assignment is about So it complements the assignments description.

- Criteria should be specific and preferably measurable (SMART), for example, “at least 15 interviews with users with a moscow question list”. Also try to avoid mixing more criteria in one.
- They should define the definition of done with the annotation level good. (Criteria are graded on the USGO scale)

If you have written the assignment and criteria, communicate them with the stakeholder (and coach) for feedback to possible improve them

4 Competences and KPI’s: Assignments and criteria are used as a tool to professionally approach problem solving. But you’re also in the process of building your ***own personal competence profile.*** If you graduate in ‘ICT and personalized study program’, you even get a personalized diploma.To get a grip on how you’re developing as an IT professional, Key Performance indicators are used to measure this.These indicators have to be attached to assignments(just like the criteria) where they can be graded. In this way every assignment helps to build your personal profile



What’s in it for me: Open learning gives you the possibility to create your own curriculum. So you can develop yourself into any ICT person you like to be. Because we work with real life challenges, the combination of competences is always meaningful. If you attach the KPI’s in a consistent manner, you can keep a detailed track of your progress and the forming of your profile.
In Canvas there is even tooling which shows this. (The performance dashboard, see picture.).

3.1 the competence framework: The set of Key Performance Indicators that is used are from a competency framework created by the HBO-i (association of dutch higher education IT schools), in collaboration with a large number of IT companies. This framework describes the field of IT in every form and in every possible combination of skills. A small movie which explains the working of the competence framework can be found here: HBO-i Competence framework.

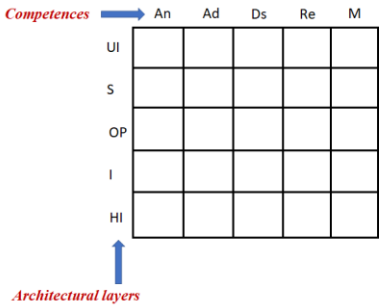
3.2 working with the framework: Attaching KPI’s to assignments can be a daunting task if you do it wrong. So beforehand some tips:

TIP: Don’t reverse engineer it. Attach the KPI’s at the right moment and it will work for you.

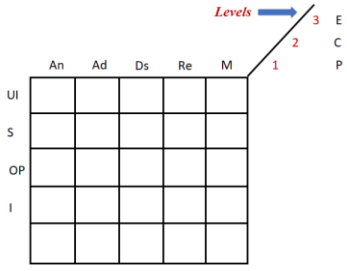
TIP: Don’t start directly with adding KPI’s to the assignment. Make sure to have the assignment and the criteria. Then start working on t6hem. When you have grip on the assignment or do the last turn in, you know what it is about. Add the KPI’s at that moment.

To understand the working of the framework, the video mentioned above will give an insight. To make sure a quick recap:

- **The matrix**: The framework is created around Competences that basically describe the software lifecycle. And if you look at it, a cyclic returning set of actions can be seen. *Analyzing, Advising, Designing, Realising, Maintaining.* These can be seen in the top row



  All these competences can be shown in what we call architectural layers. These layers are *User interaction, Software, Organisational Processes, Infrastructure, Hardware.* These layers describe the whole field of IT and you can probably recognize the basic routes like Media (UI) or Business (OP) in them. Splitting it like this means that you can work on your competences in a choice of layers. This will color your personal profile in that it can be more UI based, or more HI based, or maybe a meaningful combination of those 2 with added UI.



- **The levels:** By adding levels this model adds the possibility to grow in certain areas. The framework know's 3 different levels which describe an increasing complexity. This turns the matrix into a cube. The meaning of the levels can be translated into the phases of our curriculum, Phase1 is first year level, phase2 is corephase (until the internship), phase3 is graduation level.

  For example: If you're a software student, after your first year all your software skills are on level 1. Say you're in the second year and work on a challenge that will add UI and HI skills to your set. These will probably be on level 1. In the meantime you can develop your software skills further on level 2.

How to select the KPI's for an assignment: Finding the right kpi's isn't too hard, just a little trick is needed. But up front another tip:

***TIP*: Don't start by reading all the KPI's (250+) it will drive you crazy and isn't particularly meaningful..**

The idea is a holistic approach. You should know which architectural layers you're working on for a particular assignment. If a user interface has to be designed you're clearly in the UI layer. If you're attaching Sensors to a board and programming them it is the ….. Layer (what do you think!)

Step1: Select the layer(s) the assignment is in.

Step2: Select the competences this assignment works on.(usually more than 1)

Step3: Think about your current level of achievement in that layer.

Step4: Every cell in the cube can have 1 or usually more KPI's. **Read these KPI's** and select the ones who fit to attach to the assignment.

3.3 Working with P.O. competences: The KPI's in the competence framework describe the technical skills needed as an IT person, and also the PO competences that describe the competences every higher educated person needs. At the time of this writing there are four Personal Development competences : Future Oriented Organisation, Investigative problem solving, Personal Leadership, Targeted Interaction.

For these competences there are also 3 levels and the same here goes. Level 1 is first year, level 2 is core phase level 3 is exam phase.So if you're a second year student check the level 2 KPI's.
The way of working to find them is basically the same. Make an educated guess which one could fit and read them. If it's a fit attach them to the Assignment.

4 Assessment: Assessment is not only making a judgement, it should also be meaningful. So something that is known as *"assessment as learning"* is used. In this model everything is taken into account and is constantly feedbacked. So it is meaningful within the context of your challenge. The way assessment as learning is used, is by splitting the work roughly in 2 components (which in reality will have overlap). The products turned in and the proces. Feedback will be gathered on both aspects.

4.1 Professional products and recurring assignments: During working on a challenge you will produce more professional products. These will be turned in, in the assignments in your personal course, That's the place where the coaches (besides talking about it) will leave feedback. Assignments can be turned in multiple times and feedbacked (This is called **recurring assignments**). This will help you improve and give a view on where you stand in your development, If a product is ready to be graded on the KPI's you tell the coach. The coach will grade it and leave feedback. If you think you can still approve of it after this, you can turn it in again. So this will give you and the coach a perfect view on how things are developing.

4.2 Process and Feedpulse: While working and learning you (and your group) will go through a professional process of learning and working and so develop yourself. During the semester there will be numerous standups and feedback sessions with the coaches. During these sessions feedback will be provided on the work at hand, the status of the products and the progression. This feedback will be recorded bij yourself in a tool called feedpulse. The coaches as well as yourself can grade the status with a smiley rating.
So a complete personal record of the given feedback and where you stand is being formed.

In the end the data from the feedback sessions as well as the recurring assignments and the grading on the KPI's will be used to give a grade (Unsatisfactory, Satisfactory, Good, Outstanding).

What's in it for me: Working with recurring assignments and the regular feedback sessions will give you at any moment a view on where you stand. For it to work, you should use the recurring assignments and turn in regularly

5 Wrap up and Competence Document: At the end of the semester one grade will be given on the total performance and shown growth. This final grade will be given in a personal wrapup session. In this session some final feedback will be provided as well as an end grading. (Which shouldn't be a surprise since all the feedback should make clear where you stand.)

The final assessment is done based on a **competence document.** This document is a wrapup and reflection of the complete works of the semester. If has a list of KPI's that are proven with links to the assignments in your personal course. So this is the culmination of proof of the semester and turns your personal course into a validated portfolio.

What's in it for me: By having this kind of wrapup and reflection gives you a view on items to be addressed in coming semesters. Besides it gives you a perfect view on where you stand in your development as an IT professional based on the competence framework.