This document describes the teaching methods being used in the modules throughout the third year. These methods are closely related to the modules’ structure and the expected workload for each of the module levels.

**Module Structure:**

Each module consists of three levels: Introduction (1 h. workload), basic (5 h. workload), and advanced (9 h. workload). Each student is required to follow all the modules at introductory level (10 modules), 4 modules at basic level and 2 at advanced level.

The total number of hours of the selected modules will be 48 + 2 dedicated to preparing a presentation for the Midway seminar +2 for the final quiz for all introductory modules.

After finishing the introduction levels, the choice of basic modules is made. This is done in collaboration with other group members to ensure a good coverage of knowledge in each group. A virtual meeting is set up with each group to make these decisions.

After finishing the basic levels, the projects are distributed, and the student chooses the advanced modules. Again a virtual meeting is set up with each group to make these decisions.
Teaching methods:

Each level in a module consists of some of the following main tasks and activities (not necessarily all). Mandatory content is listed with **bold**:

- **Introduction level (1 h.):**
  - Overview lecture(s) (Max 10 min each)
  - Quiz after each video, integrated in the videos, or both (a few questions covering key learning points). The videos should be designed for this.
  - Literature + Quiz(es)
  - Final quiz for each module (for improving learning rather than assessment)

- **Final Quiz (combined for all introduction modules, reflecting the questions of the final quiz for each module). This is for assessment. 50% to pass. Each module has 6 questions, 2 are drawn randomly. A student has 3 attempts, and there is a one hour limit per attempt. Each question should be doable in 2 minutes.**

**Guidelines regarding videos with integrated quizzes and/or other H5P activities:**

This is the first time we do this in Colibri. To make the material standardized (also when shared with others, it is strongly recommended to follow these guidelines). This content is supported by the H5P Plugin, which is now installed and enabled in AAU Moodle.

- Please use the H5P editor in Moodle to create the interactive videos.
- The editor will give you the option of integrate different activities in the video, and you are welcome to also add other activities then quizzes.
- For dissemination at the end, please provide a document for where for each video you list (1) the activities you integrated in your video, (2) the questions with possible and correct answers, (3) timestamps for each activity, and (4) other relevant informations.
- Check out Humhub for additional information and tutorials.

- **Basic level (5 h.):**
  - Individual paths:
    - **Preliminary test:** Identify key prerequisites -> create questionnaire to uncover these -> for missing knowledge identify relevant learning resources on a per-question/per-topic basis. Preliminary material and/or links to other sources (template: See O6 Basic 2016).
      Remember: We cannot require anything beyond an overview of key concepts.... (max 3h). When more knowledge is required -> point to alternative exercises. Describe as an outcome of preliminary test.
  - Self-assessment and preliminary material - see above.
  - Literature study.
- Video material incl. shorter tasks (usually around 10 min. lecture/5-10 min. self-correcting questions/ working with tools).
- Self-correcting quizzes and assignments. Quizzes in Moodle.
- Practical exercises to work with the relevant tools
- Humhub spaces for each module (combined for basic and advanced)
- Each module ends with an activity such as an assignment or a quiz where the students need to actively interact with Moodle

- Advanced level (9h).
  1. Literature reading
  2. Video lectures
  3. Group assignments (in 2-4 people groups).
  4. Peer assessment workshop:
     - First each student is given one assignment related to relevant projects.
     - Next each student is given the work made by one or more students. The students assess each others work
     - Students from the same advanced module assess the work of students from the same advanced module.
     - Make the assignments more "open" to allow for different paths to the solution.
     - Alternative to peer assessment: Upload videos and discuss among the students.
  5. Space in HumHub for each advanced module, discussions initiated by teachers (and hopefully also students).
  6. Article assignment: Reading, discussion, presentation of work in relation to an article
  7. Additional material (not incl. in the 9 hours, not mandatory for students) in the form of videos, books, scientific papers, PPTs...
  8. Quizzes

- Each student prepares a 5-8 minute presentation for midway seminar for one of the advanced modules they follow. The student chooses a relevant topic related to their project (supervisor/lecturer can assist). Presentations are organised in 3-4 tracks.

All basic and advanced levels must end with an activity such as an assignment or a quiz where the students need to actively interact with Moodle. This activity has two purposes:
  1. For the students are able to evaluate whether they have learned/understood the material of the module level.
  2. For the teachers to be able to track the progress of the students in the course (by the Moodle grading system).

Additionally, the students will be involved in a variety of activities during the physical seminars focusing on presentations such as:
- Pitch talks in front of their peers
- Interactive lectures about presentations and slide deck preparation
• Videos addressing issues in professional communication

Project Supervision:

Each supervisor has his/her own style when supervising project and we so not set any limit or constrains. However, some good practices are recommended in order to for the students to understand the purpose and the expected outcomes of the group projects:

• Supervisors may help the students to refine (or narrow down) the project proposals’ goals.
• Supervisors may need to help the student understand how the project relates to the course modules and how the acquired knowledge could be put into practice.
• It is important that the local coordinators explain the dynamics and purpose of project work when recruiting students.
• Supervisors should encourage the students to write the minutes of their virtual meetings along the project work period (with and without the supervisor). In this way, the supervisors can easily follow the progress of the group. A common template for the minutes is used and made available in Moodle.
• In addition, supervisors should assist students in preparing a time plan for the project work during the midway seminar. A common template for the minutes is used and made available in Moodle.
• A milestone for every 3 weeks. Plan specific milestones during the midway seminar.

Modules time plan:

The following time restrictions are applied when working in the modules due to coordination limitations:
• All introduction levels should be finished by March 2\textsuperscript{nd}.
• Selection of basic module is done during March 3-4, dialogue between Jens and each group.
• All basic levels of the selected modules, and (self-) assessment should be finished by March 20.
• The projects are announced to the groups on March 20.
• Selection of advanced modules on March 21-22, dialogue between Jens and each group.
• All advanced modules should be finished before the Mid-way seminar (by April 13\textsuperscript{th}).
• Peer grading activity: Deadline for submission April 3, deadline for assessment April 13.
• Each student must prepare a 5-8 minute presentation of one of the advanced level assignments before the Midway seminar. This presentation (as PDF) must be uploaded to Moodle (by April 13\textsuperscript{th}).
Availability of the teaching material:

- All the teaching material can be found in the project webpage http://www.erasmus-colibri.eu/

- The Colibri Moodle room for 2017 will be made publicly accessible.

- Videos are posted in Youtube under a unique Colibri account and hosted/stored on the repository made available by EKT/NHRF.
  Youtube Channel: https://www.youtube.com/channel/UCACqthyxullHaBMgwO1-uvw

Material format details:

The material provided to the students consists mainly of videos, Internet links, and presentations and documents (.PPT, .PDF, .DOC, .XLS). In specific cases, additional tools (including their own format files) may be used such as MapInfo.

- Video specifications:
  o Minimum quality: 720p and 25-30 fps.
  o Recommended length: around 5-10 minutes.
  o Format: Publishable in Youtube (one stream) (.avi, mpeg4, mov, .wmv, ...).
  o The Colibri and Erasmus + logos must be visible in the youtube channel, and in the videos (at least the beginning and the end of each video).
Video editing tools: Freedom of choice (BoixTV for Mac, Windows Movie Maker, iMovie for Mac, Lightworks...).

Lecture videos may be also in the form of PPT presentation with voice over explanations.

Material reviewing, quality assurance and evaluation:

This process has three phases, two reviewing phases and a final quality assurance phase. For each module, the review is done by two partners not directly involved in the teaching of that particular module, and the final quality assurance for all modules is done by the same partner (ateneKom) to guarantee coherency:

- **Reviewing phase 1:** The reviewers should evaluate the teaching material in relation to the following criteria:
  - Completeness.
    - Is there a complete course description available with each module for the students in order to pick the course? (course curriculum)
    - Is pre-module teaching material available?
    - Are the learning objectives described?
    - Is an introduction for students on how to participate in the module available?
    - Is an introduction for teachers and instructors available on how to use the material and how to modify it?
    - Are the requirements, timeframe and activities clear?
    - Is there a description of supporting material (literature, readings etc.)?
    - Have the assessment criteria been defined and communicated?
  - Coherence with course description:
    - Do the selected readings and resources reflect and fit the subject and course learning outcomes?
    - Do the outcomes stated in the description align with the objectives stated in the course description?
    - Does the teaching material align with the topics made in the application for each module?
  - Adherence to teaching instructions:
    - Does the material meet the requirements set above in relation to teaching methods, hourly workload...?
    - Have innovative teaching methods been implemented (video lectures, problems, micro projects etc.)?
  - Quality:
    - Is the material (literature etc.) easily available and communicated clearly?
    - Evaluation of structure on moodle
    - Are the activities foreseen authentic and for real life use?
    - Does the material and content interconnect business, social and technical opportunities?
Does the material and content identify and utilize opportunities for future internet?
Is the number of activities appropriate and the expected workload reasonable?

- Formatting:
  - Is the presentation of the course understandable and appropriate (readible, attractive...)?
  - Are the videos available and publishable on Youtube?
  - Is all material available on Moodle? (Teaching material, introductions for teachers and students)

- Reviewing phase 2: The reviewers should assess whether their requests after the reviewing phase 1 have been successfully fulfilled. Reviewers should give the green light to the teaching material at this point.

- Quality assurance phase: Evaluation of the course as a whole, focusing on the overall course presentation in Moodle, unified module structure, fulfilment of the course’s learning goals and verification that all teaching material is available in Moodle and Youtube.

**Deadlines:**
- Dec 1\textsuperscript{st} 2016 → All teaching material should be finalized and in place in Moodle (also the videos should be posted in Youtube).
- Jan 1\textsuperscript{st} 2017 → All reviews must be finalized and sent to the respective module coordinators.
- Feb 1\textsuperscript{st} 2017 → All the revised material should be finalized and in place in Moodle and Youtube.
- Feb 10\textsuperscript{th} 2017 → All material should be approved and “marked to go” by the reviewers.

**Evaluation:**
The students play a key role in the Colibri living lab and they are involved in the evaluation and refinement of the teaching material and learning objectives. During the Mid-way seminar, each module is finalized by having a round-off lecture. During these lectures, students have the chance of discussing about the material and activities for each concrete module with the module leader. This sort of feedback also includes the students’ opinions about the concrete content of the modules and how this can be adapted/modified for the following years. In the same way, during the Project seminar, students should discuss about the projects’ outcome and how the learning process led them to achieve the learning goals of the course. Discussions about specific issues such as relevance of the project themes or workload-expected outcome relation are highly relevant to have the student involved in definition of the learning objectives and dynamics of the course.