

## WP 3.01 - E-assessment practices

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## Introduction

Current document includes the case studies collected from educational institutions across Europe and Canada within WP3 of the TALOE project. These were written based on a pre-defined template detailing information about the learning outcomes, course content, teaching practices and assessment methods. In addition, a separate section was devoted to linking the assessment to the selection criteria. The aim of the case studies is to provide input to the main deliverable of the project. Namely, a web-based platform to help teachers and trainers decide on the e-assessment strategies to use in their online courses. The rationale is that a teacher/trainer will describe the learning outcomes of the course or module and the TALOE platform will analyse them and provide an e-assessment strategy that is consistent with the set of intended learning outcomes.

The first stage concentrated on identifying and defining selection criteria for innovative and effective e-assessment practices. Instead of listing different methods the focus was placed on things that trigger a shift in what is actually assessed, how it is assessed and discarded practices where the only aspect which is "innovative" was the method itself. These shifts can be generally described as follows:

- A shift from the testing of discrete, de-contextualised elements of knowledge and skill to the assessment of more holistic, complex activities using knowledge and skills in problem-solving or authentic tasks.
- A shift from highly standardised and controlled testing methods which result in quantitative scores and where assessment is strongly separated from teaching and learning to a more diverse range of assessment methods, resulting in qualitative descriptions or judgements and where assessment is often integrated with teaching and learning and may involve students as active participants
- A shift from identifying and categorising underlying ability or 'intelligence' and ranking student performance in relation to their peers to identifying and describing achievements according to relevant criteria and standards

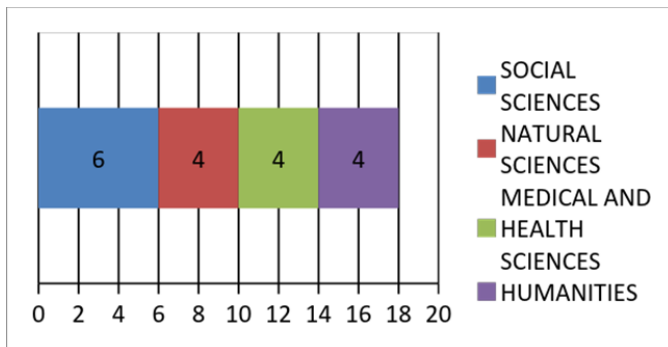
In order to identify suitable criteria matching these shifts it became evident that the emphasis had to be placed on concentrating on more general approach starting with the assessment type. This meant eliminating criteria associated with "norm-referenced assessment" practices and focusing on criteria which characterise "criterion-referenced assessment" practices, i.e. casting aside situations where assessment is based on making judgements about people (e.g. ranking students based on distribution of scores) and instead concentrating on judgements about performance (e.g. assessing the extent to which learning outcomes are met). And only then considering other aspects such as the assessment methods which might be deemed innovative (using concept maps, wikis, portfolios, learning analytics, simulations etc.). Based on the above and following the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ENQA, 2009, p. 18), an initial list of criteria for identifying innovative assessment practices was drawn up:

- Be designed to measure the achievement of the intended learning outcomes and other course/programme objectives;
- Be appropriate for their purpose, whether diagnostic, formative or summative;
- Have clear and published criteria for marking;
- Where possible, not rely on the judgements of single examiners;
- Assess more holistic, complex activities using knowledge and skills in problem-solving or authentic tasks;
- Use a diverse range of assessment methods, resulting in qualitative descriptions or judgements;
- Integrate assessment with teaching and learning and involve students as active participants;
- Identify and describe achievements according to relevant criteria and standards;

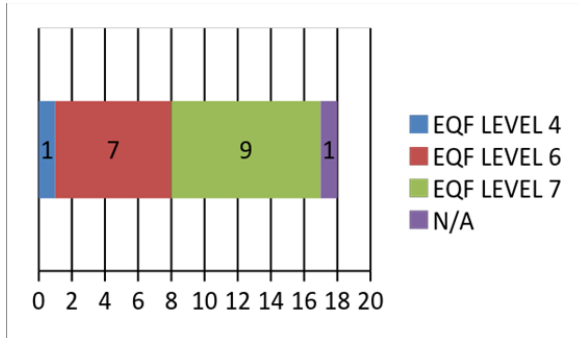
The division of case studies based on scientific field, level of education (EQF) and the number of credits (ECTS) is depicted in below figures:

### Scientific field

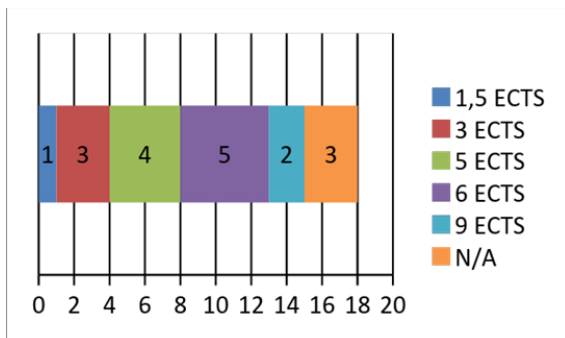
(classification based on the Frascati manual - <http://www.oecd.org/sti/inno/38235147.pdf>)



## Level of education



## Number of credits



Specific assessment methods described in the case studies included various online tests, written and practical assignments, forum discussion and oral presentations but also peer assessment, game-based testing and simulations.

## Classification overview

Learning outcomes are also becoming fundamental for structuring the standards and guidelines of quality assessment of HE and continuing education (CE) institutions in Europe and worldwide. In this context, the assessment of learning outcomes becomes a crucial process for the educational system. It should be a major concern of educational institutions to ensure that assessment of student learning is being guided by what they should be learning, i.e. assessment should be consistent with the intended learning outcomes.

Furthermore, the impact of information and communication technologies (ICT) on education has to be taken into account. The use of ICT applied to education, e-learning etc. has been increasing and its use creates new opportunities for teaching, learning and assessment and has huge potential as an answer to some of the current challenges of education. The change to the digital media has impact on the availability, reusability, accessibility and cost of learning resources, complemented by the communication and networking potential of the Internet that takes education to a global level. The application of ICT in education and in particular in assessment is a subject of great discussion. Some of the issues related with the use of e-learning in assessment are related with validity and reliability of the process.

Learning outcomes have been widely adopted in education with different roles. The early adoption in Europe is associated with vocational training. LOs were used to describe the competences of the individual after the training, with the goal of improving the dialogue with potential employers. The adoption of LO in HE in Europe is associated with European policies with impact on national policies and on HEI. These define different roles or applications for the LOs:

- A descriptor of the qualifications acquired for improving mobility and employability of individuals
- A descriptor in processes of recognition of prior learning for improving access to education institutions and validation of competences
- A criteria for quality assurance systems and accreditation processes of HEI
- A structuring role in educational systems, used as descriptor used in qualification frameworks at international, national and sector levels
- A structuring role at the institutional level, used as a multi-level descriptor in programmes inside the institutions
- A communication tool between teachers and learners, as a descriptor of the goals of a course or unit

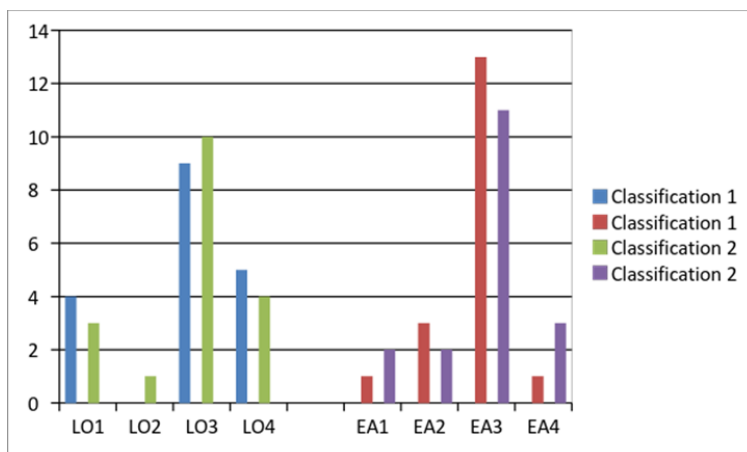
Concerning e-assessment, it is considered that it is a critical part of e-learning the same way assessment is critical to traditional learning. In terms of linking LOs and assessment, it is believed that this should be explicit. Several authors defend that students tend to determine what they learn by looking at the assessment tasks. If there is no consistency between the LOs and the assessment, the students will learn the wrong things.

To ensure and help teachers maintain this consistency, an existing tool called the ALOA model (Aligning Learning Outcomes and Assessment) can be used. This tool highlights the connection between the intended learning outcomes and the assessment strategy used during a course. It uses the revised version of Bloom's Taxonomy to establish the link between the LOs and general assessment methods. The ALOA model also proposes different scenarios of application that allow the model to be used to verify the consistency of the courses or to propose new assessment strategies that are linked with the LOs statements of the course or module.

It is a fact that not all assessment methods are valid for each type of the learning outcomes. The ALOA model provides tools for linking learning outcomes and assessment tasks. The TALOE project intends to materialize the application of the ALOA tools to the specific context of e-learning. In order to help achieve this objective, all the case studies were classified and then peer-reviewed by the partnership. The classification was executed within two categories, i.e. on the basis of learning outcomes and e-assessment methods utilised in the courses. Both categories were allocated four options as depicted below:

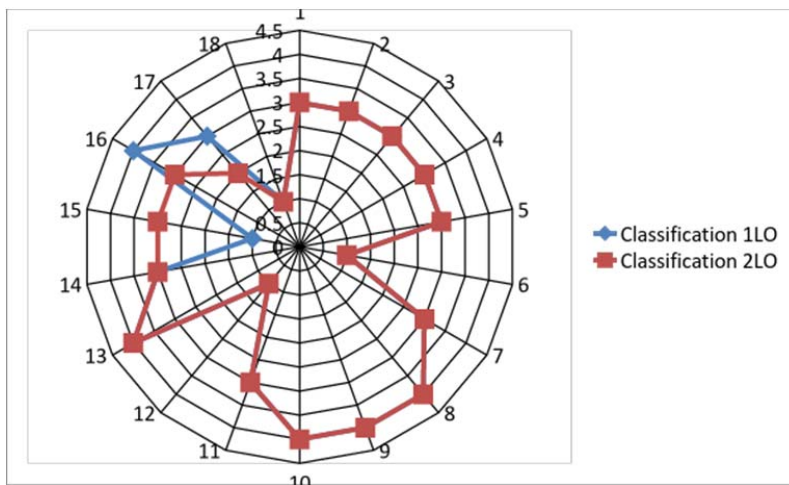
LEARNING OUTCOMES	E-ASSESSMENT METHODS
1. LO1 - Not specific LOs	1. EA1 - One method for all LOs
2. LO2 - Specific and not relevant LOs	2. EA2 - Several methods for all LOs
3. LO3 - Specific and relevant LOs	3. EA3 - Several methods for some LOs
4. LO4 - LOs according to rBloom table	4. EA4 - Several methods for each LO

Under each category, only one option was possible for selection per case study. Each partner institution was allocated two case studies for initial classification and additional two for peer review. The following figure depicts the number of instances each option for selected for both the learning outcomes and e-assessment methods category during initial classification and also in comparison with the review.



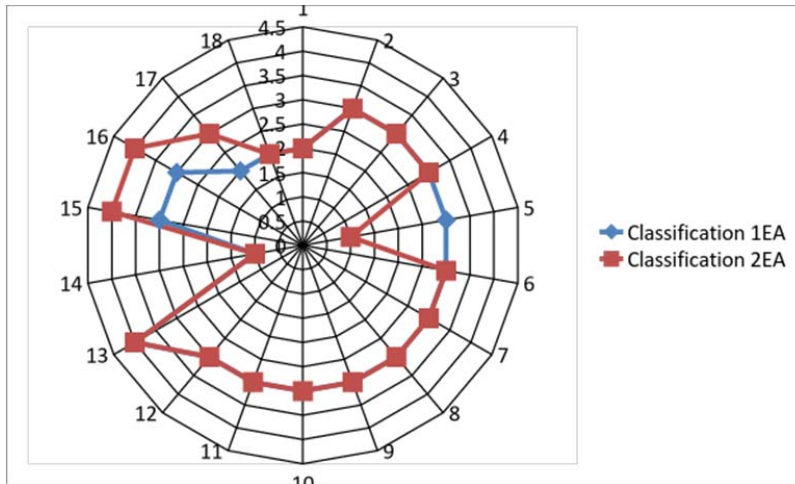
The vast majority of case studies had either specific and relevant learning outcomes (L03) or learning outcomes according to rBloom table (L04). In relation to e-assessment methods, over half were classified as having several methods for some learning outcomes (EA3).

The differences between initial classification and the following peer reviews were insignificant as shown in the following figures.



With the learning outcomes category, as demonstrated above, the differences in opinion occurred only with three case studies. Similar situation can be noted with the e-assessment methods category in the figure below, where the differences were highlighted in four case studies.





In addition, the partners were asked to provide comments under each selection to justify the classification. Below are the examples of comments for each option in both categories.

### Learning outcomes

LO1 – Not specific learning outcomes:

*The course is 9 ECTS, however it only has 3 stated learning outcomes described in the case study. Moreover, the learning outcomes are not defined in a way which specifies what students will know or be able to do as a result of the activities within the course. The outcomes are defined more as learning objectives as they indicate areas that the teacher intends to cover in the course.*

LO2 – Specific and not relevant learning outcomes:

*3 LOs are relevant to the course, but they are general. It must be define more specific learning objectives.*

LO3 – Specific and relevant learning outcomes:

*The course has only 3 LO defined, although it is recommended to have at least 4 LO. Also this is the 6 ECTS course so the number of LO should be higher in order to give possibility to distinguish between levels of achievement. LO1 should be reformulated, and LO2 consists of two LO from the different level (analyze and interpret).*

LO4 – Learning outcomes according to rBloom table:

*The course has clearly defined learning outcomes, which look specific and relevant for the course. It makes an explicit and effective use of verbs. The learning outcomes have clear practical characteristics.*

## **E-Assessment methods**

EA1 – One method for all learning outcomes:

*E-assessment method is a summative one and consists exclusively of MCQ tests delivered on computer, with item construction based on the guidelines of the National Board of Medical Examiners.*

EA2 – Several methods for all learning outcomes:

*Each LO is assessed through a practical exam using computers. An online test is also used, but the relationship with the LOs is not clearly explained.*

EA3 – Several methods for some learning outcomes:

*The course implements formative and summative assessment. Several methods are used for the evaluation process: Class attendance, written assignments, analysis and self-analysis, practical exams, written theoretical exam, oral theoretical exam/presentation. Each assessment practice is identified in details and relevant to the LOs.*

EA4 – Several methods for each learning outcome:

*Use of a diverse range of assessment methods: diagnostic, formative, summative, dynamic and synoptic assessments. The combinations of different assessments are used for each topic (lesson) within the course. Another added value is that, where possible, assessment methods do not rely on the judgments of single examiners. The choice of learning outcomes, of teaching activities and of assessment methods looks complementary to each other and narrowly connected. Moreover, students are active participants in their definition and adjustment.*



## Case Studies

### **Course: Project management**

#### **Learning Outcomes**

Get acquainted with the methods and techniques used in

- preparation,
- planning,
- management and
- realization of projects (technical buildings, developments, change).
- Practice their implementation and result facilitation techniques through case studies.
- get acquainted with the use of the project software (Microsoft Project)

#### **Content**

Overview of the content of the course:

The foundation and functions of Project Managements

- General concepts
- Project life cycle
- Cost-time-quality balance

Project definition

- Project stakeholders and participants
- Documents of project definition

Project Planning

- Risk management
- Work breakdown structure (WBS)
- Timing, Logistics, local connections
- Network planning methods, critical path
- Cost planning
- Project balancing
- Documents of project planning





## Project Management

- Group work, leadership responsibility
- conflict management
- Communication management
- Change management
- Project tracking
- Documents of project closing

## Teaching

The form of education: distance education (blended-learning). Student can study by ILIAS e-learning platform in the College.

(ILIAS is a web based Learning Management System, which allows users to create, edit and publish learning and teaching material on an integrated system, in any web browser. The Hungarian version has been maintained by Dennis Gabor College since 2004. The customised version of ILIAS installed at DGC coordinates the Internet based distance education services of the College, so that it provides the infrastructure for a systematic study of electronic course materials and online communication.)

All teaching materials are uploaded to this platform. We do not use any printed materials. Face to face lectures are optional for the students but Participation in lectures and consultations strongly recommended, participation in the IT laboratory practice is compulsory.

- Methodology guide is provided for studying
- Practice their implementation and result facilitation techniques through case studies.
- software Microsoft Project, in the form of a laboratory practice.

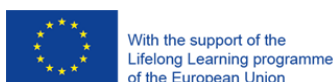
## Evaluation

### *Forum*

The most common use one is the forum of students. Perhaps it is the most efficient element of the self-learning procedure. The well moderated forum by tutors can reduce considerably the charge of the teaching personnel. The structure of the forums are very clear and an easy to overview one.

### *Short tests*

Solving short tests during the semester – the tests have preparatory, revision and assessing purposes for the closing exam



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### *Self-assessment*

Self-assessment tests, exercises (in ILIAS). The general idea of self-test, which is often called online examination, is to choose the correct answer from a retain number of possible answers, or eliminate the false one. These self-tests can be easily entered in XML format into any type of frame systems. However we cannot consider the self-test as the right way of examination as it requires dedicated classroom with accredited supervision personnel.

### *Exercises*

Obligatory homework. The students have to work out a project plan. Use of special software for project planning by computer (e.g. Microsoft Project) is recommended. The students have to upload their Project Plan o the ILIAS LCMS. The teacher evaluated each project plan and give feedback to the students on the ILIAS forum.

### *Final examination*

- the student is assessed on written test
  - questions in the 60-minute tests can be multiple choice
- the student is assessed on IT test (IT software skills)

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate
  - Formative assessment is used during the course, monitoring, assessment and feedback continuously by tutors of the course.
  - Summative assessments are at the end of main sections and final assessment at the end of the course.
- b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)
  - Get acquainted with the methods and techniques used in Project planning and management (technical buildings, developments, change).
  - get acquainted with the use of the project software (Microsoft Project)
- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)
  - Self-evaluation: fill the online questionnaire – feedback for students about the rates
  - Short tests: the student is assessed on the basis of the average of two written tests – the minimum requirement is 50% in each test.

- Exercises: quality of project plans worked out by student are marked, and feedback.
- Final examination:
  - the student is assessed on the basis of the average
  - theoretical skills: written tests
  - practical skills: of use the project software (Microsoft Project) is marked
- d) Please identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)
  - assessment by teacher (tutor)
  - self-assessment.
- e) Please describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)
  - management competences,
  - working in groups,
  - project planning by computer,
  - risk management
- f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (**Selection Criteria 6**)
  - student forums on LCMS,
  - evaluation and feedback for short test,
  - evaluation of student's project plans on ILIAS
- g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).
  - The main aim to develop the student's competences in the field of project management. The learners could use the teaching materials in ILIAS individually, could develop IT management skills in work out their project plan.



## **Course: Multimedia**

### **Learning Outcomes**

The purposes of the subject are as follows:

- to acquaint students with the multimedia, information processing technology in general (audio, video, Internet, interactivity),
- to acquaint students with the most important hardware and software components, their operation characteristics and application possibilities,
- theoretical lectures are followed by laboratory practices to develop the skills of the students in handling multimedia applications.

At the output of the course the student has to be able:

- to create little animation from a set of photos
- to create colorful multimedia projects (video films with sound)

### **Content**

#### Topics

#### Lectures:

1. Basics of multimedia, introduction to multimedia systems
2. Discussing the importance of multimedia in different fields of society
3. Design steps of a multimedia project. General considerations
4. Storage media for digital technology (CD, DVD, BD).
5. Multimedia applications (OCR, hypertext, hypermedia etc.).
6. Human vision and informatics. Light, colors, etc.
7. Image processing, comparison of different procedures of pictures' compression, animations
8. Human hearing (acoustics). Sound, intensity, frequencies, sampling.
9. Digital technique of the sound, digitalizing different sounds, processing of the sound.
10. Multimedia and the internet, different animations, movies, videos, video techniques.
11. Videoconferencing

#### Laboratory:

1. Use of different Web 2.0 programs for manipulation of the images, use of professional photo editor program (Photoshop). Creation of animations.



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2. 1<sup>st</sup> practical exam: creating of animation
3. Introduction into the use of video editing programs
4. Use of video editing programs: Adobe Premier Pro, etc.
5. 2<sup>nd</sup> practical exam: creating a little film with music, subtitle and narration.

### **Teaching**

This subject does not require any specific theoretical prerequisite knowledge. Students should be familiar with the use of different application software and of different operating systems.

Method of teaching: Colourful lectures are available in electronic form for distance learning, and guided laboratory practices will be given, using PowerPoint presentation with embedded video and different multimedia elements.

This subject can be learned based on the uploaded resources and advised bibliography. Participation in the laboratory is compulsory.

### **Evaluation**

Ways of assessment:

Examination of this subject consists of:

- Two practical exams (using computers) 60 minutes each exam.
- One online test in 45 minutes.

1<sup>st</sup> practical exam:

Students should be able to resize pictures and create little animations using Adobe Photoshop program. The real task will be described by the teacher.

2<sup>nd</sup> practical exam:

Students should be able to create a little movie of 2-3 minutes length. This film has to have a background music, subtitle, narration sound and author list. The real task will be described by the teacher.

Principles of assessment for practical exams:

14 - 15 point	grade 5
12 - 13 point	grade 4
10 - 11 point	grade 3
8 - 9 point	grade 2
< 8 point	grade 1 (failed)



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Online test:

During the online test students should answer a selection of the following type of questions:

- Description
- Essay
- Matching
- Embedded Answers (Cloze Test / Gap Fill)
- Multiple Choice
- Short Answer
- Numerical
- True/False

Computer-Based Assessment refers to assessment which is built around the use of a computer.

During the course computerized adaptive testing (CAT), form of computer-based tests has been used using ILIAS content management system. This test was related to assessment of IT practical skills and knowledge tests.

Principles of assessment:

89 - 100 %	grade 5
79 - 88 %	grade 4
68 - 78	grade 3
57 - 67	grade 2
<=56	grade 1 (failed)

Very important note: in the calculation of the final practical exam mark the online test mark weights double.

Example of calculation of the final practical exam mark

1 <sup>st</sup> practical exam mark:	2 <sup>nd</sup> practical exam mark:	online test mark:	2 <sup>nd</sup> online test	Practical exam mark	Final mark
5	2	3	6	3,25	3

If a part of the exam is failed, that part can be repeated.



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## **Course: Intercultural skills**

### **Learning Outcomes**

Having completed this module:

- You will get conscious of the different forms and dimensions of international mobility.
- You will have the opportunity to discover different definitions of culture and read explications of cultural differences.
- You will understand the notion of cultural stereotype as well as its role in relations between different cultures and the possible traps of it
- You will acquire knowledge about complexity of intercultural competence and development of intercultural sensibility.
- You will be able to create practical activities according to the needs of your students.

### **Content**

This module is addressed to teachers in secondary (high school, general or vocational educational establishments) or higher education who's students are preparing an international mobility. We would also like to arouse interest among teachers who are ready to improve their knowledge in the field of Intercultural competences. The teacher-activities are mainly addressing this first group, while the individual activities are mostly created for the second one.

The module is composed by 10 units. Each of the topics below will be treated in two parts: unit "a" will expose you some basic "theoretic" knowledge type information about it, while unit "b" will make you develop the same topic via practical teacher-activities. The last unit is to be treated separately because it proposes some practical activities which could facilitate your students' integration in their host environment.

The units of the module are as follows:

- Unit 1 – Introduction
- Unit 2a knowledge: International mobility
- Unit 2b skills: International mobility
- Unit 3a knowledge: Culture and cultural differences
- Unit 3b skills: Culture and cultural differences
- Unit 4a knowledge: Cultural knowledge and stereotypes
- Unit 4b skills: Cultural knowledge and stereotypes
- Unit 5a knowledge: Intercultural competence



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- Unit 5b skills: Intercultural competence
- Unit 6 skills: How to facilitate acclimatization of students during their mobility?

### Teaching

Five hours of on-line self-study with self-assessment and peer communication and activities.

### Evaluation

A positioning tool on the portal helping in self-evaluation whether or not to choose the module for learning. Module post-test reflecting on the cognitive measurable outcomes using Moodle testing tool.

### TALOE specific information

1. Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate

Purpose: pre-test, diagnostic or summative. As the module is a non-tutored module, self-learners may freely use the module test to decide whether the module have to be chosen for learning, or diagnose the level of achievements in order to allocate more resources to learning or to conclude with a given level of mastery.

2. For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)
  - You will get conscious of the different forms and dimensions of international mobility. (assessed)
  - You will have the opportunity to discover different definitions of culture and read explications of cultural differences. (assessed)
  - You will understand the notion of cultural stereotype as well as it's role in relations between different cultures and the possible traps of it (assessed)
  - You will acquire knowledge about complexity of intercultural competence and development of intercultural sensibility. (not assessed)
  - You will be able to create practical activities according to the needs of your students. (not assessed)
3. Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

Test marking: 100-80% Very good, 80-60% Good, 60-40% Not bad, 40-0% Restart!

4. Please identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)



Course development team: Authors, Course designer

5. Please describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)

knowledge, comprehension, application

6. Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (**Selection Criteria 6**)

closed questions: Matching, multiple choice, numerical, short answer, true-false

7. Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).

Total self-evaluation, learners may diagnose which parts of the module were mastered, and which parts (units worth re-learning).



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## **Course: DigiMina | self- and peer-assessment of teachers' digital competencies**

### **Learning Outcomes**

The current assessment practice described herein concentrates on assessing teachers' digital competencies. As this is not a course, there are no learning outcomes. However, since the competencies are defined as specific statements describing the desired knowledge and skills, they act as reference points for detailed assessment activities. In terms of DigiMina, generic ICT competency frameworks such as International Computer Driving Licence (ICDL) provide too narrow and de-contextualized perspective on the use of ICT in teachers' work. Therefore several international initiatives are aiming at developing more relevant digital competency frameworks for teachers (e.g. NETS-T by ISTE). Here competency is defined as an integrated set of personal characteristics (e.g. skills, knowledge, attitudes, social capital, experiences) that an individual possesses or needs to develop in order to perform an activity within a specific work-related context. Teachers' digital competencies are here used as a synonym for educational technology competencies: these are the competencies that are expected from teachers in digital age, in order to facilitate efficient and creative learning of their students, but also to coordinate their own sustainable professional development in the context where the pace of technological innovation is only increasing. DigiMina is a research project that is carried out in the contexts of pre-service and in-service teacher education in Estonia. The main focus of the study was authentic assessment of digital competencies based on contextualised tasks attached to each performance level, as well as the technological implementation of such method while taking into account feedback from users involved in participatory design sessions.

### **Content**

DigiMina is an experimental web tool for self- and peer-assessment of teachers' digital competencies, developed in Tallinn University, Estonia. DigiMina supports teachers in building and sharing a personal competency profile based on the results of self-evaluation, self-tests based on authentic cases and peer-assessment of evidences provided by teacher through his or her e-portfolio. The competencies are assessed using the performance indicators that are based on the competency model NETS for Teachers created by the International Society of Technology in Education. DigiMina is built as a plugin for an open-source social networking platform Elgg. Self-test questions are imported to DigiMina from any compliant test item authoring tool in IMS QTI v.2.1 format (XML). Envisaged implementation scenarios of such assessment tool include school-wide audit of digital competencies and related training needs, but also personal recommendation for relevant training courses available on the central course catalogue..

### **Evaluation**

A small-scale experiment was conducted in order to validate both DigiMina software, a set of self-test questions and related approach to online self- and peer-assessment of teachers' digital



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competencies. A group of 50 teachers, all from different primary and secondary schools across Estonia, were invited to go through the complete workflow of self- and peer-assessment of their digital competencies using DigiMina tool. As the process of assessing full range of competencies listed in the national digital competency model for teachers would take too much time, it was decided to include only one competency subdomain in the assessment exercise: modelling digital-age work and learning. A complete set of test questions (1–2 items per competency) were authored in TATS environment and imported into DigiMina in QTI XML format where they were bound to the relevant competency definitions in teachers' digital competency model.

After these preparations were completed, a group of 50 teachers created DigiMina user accounts for themselves, filled in the DigiMina user profile and initiated a competency test consisting of five phases: (1) estimating one's performance level for each of the 4 competencies in selected competency sub-domain (modelling digital-age work environment), (2) responding to self-test questions for estimated performance level, (3) if needed, responding to open-ended questions (only when competency levels 4 or 5 were estimated), (4) performing a peer-assessment (only if requested), and (5) sharing one's competency profile with other teachers (optional task).

Together with initial demonstration of the DigiMina tool, the phases 1 and 2 took about 30 min to complete by all teachers in the lab settings, while the phases 3–5 were completed within the next 2 weeks. All participants were asked to fill in the survey questionnaire after completing the testing of DigiMina. The first block of the questionnaire addressed the usability and perceived usefulness of DigiMina software. The easiest operations for users were creating a user account and launching a competency test, while the most complicated operations appeared to be the ones related with launching and completing the peer-assessment, along with regulating access to one's personal competency profile. Half of the respondents considered the system to be easy to use, only one person disagreed strongly with such claim. With regard to the user interface of DigiMina, 75% found it to be intuitive and easy to navigate. Respondents were also quite sceptical about feasibility of DigiMina's peer-assessment process, based on random assignment of peer-reviewers who are expected to contribute on quid pro quo basis. Respondents were generally satisfied with reliability and validity of questions, even more with the way the questions were contextualized within teachers' everyday work. While the multiple-choice items did not take too much time to respond to, the perceived effort was significantly higher for open-ended questions submitted to peer-review. In general, teachers who took part in the DigiMina validation experiment were satisfied with both the approach to web-based self- and peer assessment of teachers' digital competencies and how it was implemented in the design of the DigiMina tool.

### **TALOE specific information**

- a) The purpose of self- and peer assessment of teachers' digital competencies using DigiMina tool can be either diagnostic or formative but certainly not summative, as the resulting competency profile is kept private for personal use only. As a diagnostic assessment tool, DigiMina helps teachers identify their competency gaps using the new national standard for teachers' digital competencies as the guiding framework. DigiMina also helps reveal the

discrepancies between teacher's self-assessment of his/her digital competencies and more objective assessment based on solving authentic tasks mapped to performance levels. Some teachers evaluate their digital competencies lower than actual due to low self-efficacy. As a formative assessment tool, DigiMina assists teachers in identifying the directions for further professional development in relation with digital competency standard. **(Selection Criteria 2)**

- b) The criteria for measuring the performance (or achievements) of DigiMina users were derived from the adapted version of National Educational Technology Standard for Teachers by the International Society of Technology in Education. A competency-based assessment rubric was created which operationalized the performance related to each competency on five levels. Then two authentic assessment tasks for each competency level were created, most of these tasks involved either (screen) video or narrative describing an incident or use case in the context of real life together with multiple response or open-ended questions. **(Selection Criteria 3/8)**
- c) Participants' responses to multiple-response questions were evaluated by the DigiMina software, while responses to open-ended questions were evaluated by peers. DigiMina assigned each response randomly to be evaluated by another user of DigiMina anonymously. In case the evaluator declined the request or did not evaluate quickly enough, a new evaluator was randomly assigned. **(Selection Criteria 4)**
- d) The DigiMina tool is designed to evaluate teachers' digital competencies in accordance with the new national standard which is an adaptation of National Educational Technology Standards for Teachers by ISTE. This standard includes five digital competency sub-domains, each sub-domain having a set of 4 competencies (see [cnets.iste.org](http://cnets.iste.org)). **(Selection Criteria 5)**
- e) The DigiMina assessment method promotes autonomy of the students in the initial teacher education programme as it is designed to be used only for diagnostic and formative assessment and its results are not used for determining the grades or academic credits. **(Selection Criteria 7)**

## **Course: Computer-Assisted Instruction**

### **Learning Outcomes**

#### **A. Knowledge and understanding**

- knowledge of the theoretical aspects of new computer-assisted instruction
- understanding the specificity and limits of virtual learning environments
- understanding the changes that occur in the educational situation with an ICT component
- knowledge of the teacher's roles and competencies in an educational situation with an ICT component
- identify key elements of educational programmes initiated at national and European level towards knowledge-based Information Society

#### **B. Explanation and interpretation**

- contextualisation of elearning phenomenon in historical and epistemic perspectives
- referencing pedagogical concepts with diverse approaches to CAI and virtual environments
- differentiated treatment of training situations in the perspective of the introduction of appropriate ICT tools for optimization

#### **C. Instrumental - applied**

- use of virtual learning environments for the optimization of teaching
- pedagogical design of virtual learning environments and educational software
- choosing the most appropriate solutions and ICT tools for different types of learning situations
- draft a learning unit project which incorporates ICT elements
- use of online communities of practice for collaborative activities

#### **D. Attitude**

- adopting a personal perspective on effective integration of ICT in education, based on a critical interpretation of theories of distance education
- promoting aspects of virtual environments with added value for the theory and practice of instruction
- constant involvement in educational innovation activities with their peers and with external experts to create new knowledge and circumstances related to learning and teaching practices



## Content

- Knowledge-Based Society
- Digital skills. Competencies of educators in virtual training environments
- Elearning programs. Virtual learning environments in higher education and training
- Computer assisted instruction. Virtual learning environments for K-12. Educational software
- Use of new technologies for teaching. Constructivist perspective. Integration of IAC component into the formal curriculum. Project-based learning. Non-formal learning situations.
- Designing educational situations using ICT. Practical applications - integration of educational software into daily teaching
- The use of online applications
- The design of educational software
- Online platforms for professional development. Designing virtual environments for training.
- Assessment of knowledge and skills, using new technologies
- Innovation in education

## Teaching

Interactive teaching strategies based on cooperation and collaboration (reciprocal teaching-learning method, the mosaic method, tools and online collaborative environments).

Teaching strategies geared towards creative learning (brainstorming, thinking hats method, research).

## Evaluation

Minimum requirements:

- develop a learning task in the domain of specialization, in which pupils would use ICT - description of possible working manner, or (2) developing a two-pages paper describing aspects of CAI
- description of at least two situations in K-12 education, higher education or continuous education (training) which make use of new technologies or (2) listing at least two pedagogical design principles of virtual learning environments or (3) description of components, objectives, stages and/or effects of a national education programme with an ICT component



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### Requirements for the maximum grade

- Active participation in at least half of laboratory activities during the semester
- draft a learning unit in which ICT is used and (2) development of a one page review of an existing text
- Demonstrating thorough mastery of the operating concepts and theories within the discipline
- Ability to motivate the choice of appropriate ICT tools and solutions for a given educational situation
- Capacity of critical analysis of e-learning initiatives, projects and programs
- Use of online collaborative environments for professional development
- Promoting aspects of virtual environments with added value for education theory and practice.

#### A. Project (sent via email)

- Analysis / evaluation of the learning unit project / essay / review, together with the student.
- Feedback and discussions on the draft prepared.

#### B. Group discussions (online forum)

- Key aspects of the design, implementation and evaluation of educational situations with a significant ICT component.

#### C. Individual examination (email and face-to-face)

- Direct questions to assess skills developed regarding to the knowledge, interpretation and application of discipline-specific content.

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (Selection Criteria 2). If different methods/practice have different purposes, please discriminate

The purpose is mainly formative.

- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (Selection Criteria 3/8)

### Minimum requirements:

- (1) develop a learning task in the domain of specialization, in which pupils would use ICT - description of possible working manner, or (2) developing a two-pages paper describing aspects of

## CAI

- (1) description of at least two situations in K-12 education, higher education or continuous education (training) which make use of new technologies or (2) listing at least two pedagogical design principles of virtual learning environments or (3) description of components, objectives, stages and/or effects of a national education programme with an ICT component

Requirements for the maximum grade:

- Active participation in at least half of laboratory activities during the semester
- (1) draft a learning unit in which ICT is used and (2) development of a one page review of an existing text
- Demonstrating thorough mastery of the operating concepts and theories within the discipline
- Ability to motivate the choice of appropriate ICT tools and solutions for a given educational situation
- Capacity of critical analysis of elearning initiatives, projects and programs
- Use of online collaborative environments for professional development
- Promoting aspects of virtual environments with added value for education theory and practice.

d) Please identify who were the assessors: single teacher, multiple teachers, peers, self.  
(Selection Criteria 4)

A. Project. Assessors: two professors

B. Group discussions (online forum). Assessors: self, peers and the two professors

C. Individual examination (email and face-to-face). Assessors: the two professors.

e) Please describe what type of skills and competences were intended to be assessed by each method/practice (Selection Criteria 5)

A. Project: competences: design of learning situations with a significant ICT component; skills: critical thinking; problem solving.

B. Group discussions (online forum): mastery of pedagogical concepts related to CAI and distance education; communication and collaboration; critical thinking.

C. Individual examination (email and face-to-face): conceptual and factual knowledge; capacity of argumentation using domain-specific concepts.

f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (Selection Criteria 6)

A. Knowledge and understanding: A- Project, B- Group discussions, C- Individual examination





B. Explanation and interpretation: B- Group discussions, C- Individual examination

C. Instrumental – applied skills: A- Project, C- Individual examination

D. Attitudinal: B- Group discussions, C- Individual examination

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (Selection Criteria 7).

Students are consulted to establish the most suitable learning and assessment activities, at the beginning of the course. The cooperation and collaboration methods (among students and between students and professors) are extensively used during teaching, learning and assessment activities. Creativity, critical thinking and problem solving are necessary to successfully fulfil the laboratory activities and in the design of the project used as well for assessment.



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## **Course: Methodology of Informatics Teaching 1**

### **Learning Outcomes**

After successful completion of the course, participants will be able to:

1. analyse held lesson using the methodological insights
2. articulate lesson using appropriate teaching methods and forms of work, didactic principles and teaching resources
3. organize the teaching process
4. apply modern information and communication technologies in the educational process

### **Content**

Introduction lessons

- Methodology of informatics and computer science as a specific subject. Teaching methods and related fields. Scientific and didactic matrix.

Education and teaching

- Pratt's general model of teaching.
- Teaching tasks (material, functional, educational).
- Types of classes in school (regular, optional).
- Other types of classes: classes (seminars), distance learning (e-learning).
- Types of instruction: frontal teaching, teaching in groups, individual form of teaching.

The content of education, instructional materials and aids

- The content of education.
- Curriculum.
- The curriculum (framework, construction, operational).
- Teaching resources.
- Teaching aids.

Teaching methods and principles

- Teaching methods which are appropriate in informatics class.

The structure of the teaching process

- Preparation and introduction of students to learning and teaching, learning new knowledge

and skills, practice, training and assessment.

Specifics of informatics class

- Specialities in the use of ICT equipment and tools, class technical conditions, individual differences of students.

Preparing teachers for teaching

- Making preparations for the lesson.

Computer training: principles, resources, graduation

- Principles of research in computer education. Information sources and tools, crawlers.

The practical exercises are performed in real school environment during regular informatics classes in secondary schools. They are organized as: exemplary classes, public classes and individual classes. Analysis of exemplary, public and individual classes. Further, exercises provide preparation and training before and after practice in real school environment.

### **Teaching**

Course is based on two main elements. Lectures and practical exercises. In previous section (3. Content) content of the lectures are described through first nine paragraphs, while exercises are described in the last paragraph. Lectures are based on frontal teaching, as well as group and individual assignments. Practical exercises have three main elements: preparation of the students for teaching, performing teaching of informatics class and analysis of the teaching process. Practical exercises also implement frontal work (during the analysis), as well as group work (attendance and performing of the teaching) and individual practice (mentoring).

Both lectures and practical exercises are focused on students becoming competent teachers of informatics.

### **Evaluation**

Since course is focused on students becoming teachers of informatics, assessment methods are focused on both theoretical and practical knowledge and skills. Several methods are used for the evaluation process:

- Class attendance – since the course is focused on practical skills students are required to regularly attend their classes.
- Written assignments – students have several written assignments which are graded:
  - creation of preparation materials for teaching (at least for five different classes/units)
  - practical advices for teachers (adding personal experience and advices/ recommendations for creation of preparation materials as well as for conducting



teaching process)

- o shared assignment between several courses (in coordination with 3 other courses which are obligatory for students) – students must find and write a reviews for four different ICT tools which can be implemented in various teaching elements, not necessarily related to the informatics class
- Analysis and self-analysis – students are required to analyse (in oral and written form) classes they attend (held by school teachers and other students/members of the group), as well as conduct self-analysis of the classes they have held
- Practical exams – out of (at least) five classes each student must hold, two informatics classes are graded as part of final course exam
- Written theoretical exam – the exam is based on lecture elements which are closely related to the practical exercises.
- Oral theoretical exam/presentation – as part of the course and its final exam, students are required to create one presentation on a specific topic (related to practical elements and teaching practice). After the presentation students answer to questions related to their presentation/topic and theoretical elements from the lectures.

All mentioned elements are part of the final grade. All assignments (except practical parts like holding the presentation, conducting teaching, etc.) are submitted and graded on-line where students also receive feedback from the teachers.

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate

The course implements formative and summative assessment. Formative assessment is used during the course, for continuous assessment and monitoring of the students' progress. Formative assessment is conducted through mentoring/guidance and feedback which target students written assignments as well as their practical exercises in secondary schools and informatics classes. Summative assessment is used at the end of each section (exemplary classes, public classes and individual classes, analysis and self-analysis and theoretical lectures) and end of the course.

- b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)

1. Class attendance – this is the prerequisite for students. Students must attend practical exercises to be able to conduct their assignments
2. Written assignments (creation of preparation materials for teaching) – 3<sup>rd</sup> learning outcome
3. Written assignments (practical advices for teachers) – 2<sup>nd</sup> learning outcome

4. Written assignments (shared assignment between several courses) – 4<sup>th</sup> learning outcome
5. Analysis and self-analysis – 1<sup>st</sup> learning outcome
6. Practical exams – 2<sup>nd</sup> and 3<sup>rd</sup> learning outcome
7. Written theoretical exam – 2<sup>nd</sup> and 3<sup>rd</sup> learning outcome
8. Oral theoretical exam/presentation – 4<sup>th</sup> learning outcome
  - c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)
    1. Class attendance – presence of students during the lectures and practical exercises is marked in the online environment. Students are required to attend 85% of organized practical exercises.
    2. Written assignments (creation of preparation materials for teaching) – assignments have descriptive ratings and feedback which are based on multiple criteria and guidelines introduced to students at the beginning of the course along with practical examples of the assignment.
    3. Written assignments (practical advices for teachers) – students are graded according to the quantity and quality of advices they enter, and this assignment is considered as extra credit (maximum is 10 points)
    4. Written assignments (shared assignment between several courses) – students are presented with a template, guidelines and examples of finished assignment and are graded according to the mentioned elements. (maximum is 15 points which are evidenced in another course)
    5. Analysis and self-analysis – each analysis is graded according to the presented best practices, guidelines and advices for conducting the analysis. (maximum is 10 points)
    6. Practical exams – each type of practical exams is graded separately, based on predetermined elements and best practices in teaching process (up to 10 points for exemplary classes, 15 for public classes and 10 for individual classes)
    7. Written theoretical exam – the exam has classical (10) closed-ended and (5) open-ended questions which are graded according to their complexity (maximum is 35 points)
    8. Oral theoretical exam/presentation – students are assessed according to created presentation, their presentation skills and their answers to teacher questions related to the presented topic (maximum is 15 points)
  - d) Please identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)

Each student is assessed by four teachers, peers and him/her-self.

- e) Please describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)



1. Class attendance – students liability
2. Written assignments (creation of preparation materials for teaching) – writing skills, teaching skills (preparation for teaching), theoretical knowledge (teaching methods, teaching aids, class structure, etc.), creativity
3. Written assignments (practical advices for teachers) – analysis, creativity, display of ideas
4. Written assignments (shared assignment between several courses) – writing skills, creativity, display of ideas
5. Analysis and self-analysis – analysis
6. Practical exams – planning, teaching skills
7. Written theoretical exam – theoretical knowledge
8. Oral theoretical exam/presentation – presentation skills, oral skills
  - f) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).

Goal of the course is to prepare students as teachers of informatics. All defined learning outcomes focus on the key elements of the teaching process. The course is closely related with other courses which belong to the same study programme. Lectures provide students with additional theoretical knowledge which must be applied in the practical exercises. Such approach clearly demonstrates students the applicability of their knowledge (theory). Further, analysis and written assignments help students track their progress and focus on necessary elements.

## Course: Discrete Mathematics with Graph Theory

### Learning Outcomes

Learning outcome	E-assessment method (f2f assessment omitted)
LO1: Define and classify binary relations	Data base with tasks implemented in LMS with shuffle
LO2: Apply algorithms based on prime numbers on practical problems	Homework tasks implemented in LMS (Sage, Python) + <b>2nd example</b> described below
LO3: Understand the structure and types of proofs in mathematics	Data base with tasks implemented in LMS, e-discussion groups
LO4: Define and relate basic notions in graph theory	Data base with tasks implemented in LMS
LO5: Apply algorithms and theorems from graph theory on solving problems	Homework tasks implemented in LMS (Sage, Python applets)
LO6: Use mathematics literature from variety of sources and at least one text processor and LMS suitable for mathematics	Practical problem implemented in LMS + social software (for example: delicious)
LO7: Structure and solve real work problems by tools from discrete mathematics and graph theory working in teams	Defining/solving practical problem implemented in wiki – <b>1st example</b> described below

### Content

The syllabus consists of two parts: in the first part different topics in discrete mathematics are covered and the second half is dedicated to the graph theory and its applications. The topics have sound mathematical theoretical foundations but there are also a lot of applications of mathematical theory in informatics and business, e.g. problem solving exercises that are performed individually or in teams.

### Teaching

Blended teaching and learning. Lecturing and exercises f2f; Problem solving in teams - LMS; Collaborative learning – wiki...

### Evaluation

There are several of them (data-base with exercises for individual work with shuffle system,



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modeling with open-source software, cryptography problems, problem owning/solving etc.) and I pointed out two in more details.

**1<sup>st</sup> Example:** Let us describe the way which we used in this course in order to assure the fulfillment of the **learning outcome LO7: Structure and solve real work problems by tools from discrete mathematics and graph theory working in teams** that is connect to the following outcomes at the level of study program: *The ability to understand and apply mathematical methods, models and techniques appropriate for solving problems in the field of information and business systems) concerning mathematical modelling and problem solving.* Besides classical problem solving, when the description of a problem is given to students by teachers, we try to develop additional student's competence connected with recognizing real life problems that can be formulated and afterwards solved by the usage of non-trivial mathematical theories and techniques which students have learned in the course. In such a case students become problem owners (replacing the industrial representatives) and they are interested to formulate it carefully and also to monitor the solution finding process, as well as to evaluate the final solution. This teaching method engages students actively in a deep conceptual mathematical activity, to develop their ability in mathematical reasoning and collaborative learning. It is very important at the beginning of collaborative work to explain the educational goals of the activity and to provide students with the joint problem space.

wiki has been introduced in order to support student team work, problem setting and problem solving exercises and to enable monitoring of students' work and progress. In this particular situation students are divided into teams of three and in the first part of their team work each group has to identify and describe one real world problem that can be, in their opinion, solved by methods of discrete mathematics or graph theory. The proposed problem has to be described correctly and references have to be given by the use of delicious social bookmarking.

After this first phase teams exchanged their problem assignments and the second stage of the problem solving phase starts. In this phase each team has to investigate and work on finding the solution to the assignment, prepared by some other team. The whole collaboration has to be recorded in the wiki system implemented in the LMS Moodle.

The evaluation of the project has been done by using of rubrics implemented in Moodle by professor and two assistants. Peers can also influence overall evaluation (in rubrics there is a recognized criterion for that.)

**2nd example.** When investigating integer numbers, their properties and corresponding theorems have been introduced, different applications like RSA cryptosystem, the usage of congruencies in ISBN (International Standard Book Number) and UPC (Universal Product Code) is discussed and investigated. An interesting exercise that we use, as **formative** assessment of **LO2: Apply algorithms based on prime numbers on practical problems**, is to provide communication between students and teachers by using the RSA cryptosystem and public and private keys for encryption and decryption. A teacher sends encrypted exercise to a student and the student has to decrypt it, solve it, and then again send encrypted solution back to the teacher. The whole process was implemented in Moodle



by use of open source mathematics software Sage (before we used Mathematica software). Further, especially fruitful opportunities for students' investigations can be found in the graph theory when particular emphasis is put on applications and problem solving in the area of ICT.



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## **Course: HiT 1 - online course of Croatian as a foreign language**

### **Learning Outcomes**

After the course, the participants will be able

- to introduce themselves in Croatian
- to talk about their preferences and daily activities using frequent phrases, basic vocabulary and basic grammatical structures;
- to understand written sentences or spoken utterances about basic everyday situations, such as introducing oneself, ordering in the restaurant, speaking about daily activities;
- to make basic phone conversation
- to write short notes or important information,
- to fill in a form with personal information
- to name and recognize some facts about Croatian culture, such as: largest cities, main regions, typical food, historic monuments.

### **Content**

The course HiT-1 is a beginner level course of Croatian as a foreign language, delivered as an online course in Moodle. The course consists of 7 units, each of it having the same structure, consisting of several activities/modules:

- written and spoken version of a main text (aimed at developing communicative competence)
- vocabulary exercises
- grammar explanation (in 3 languages: Croatian, Spanish and English)
- grammar exercises
- activities for developing listening skills and pronunciation
- activities for developing writing skills
- self-assessment activities
- interactive language activities/games(Hot potatoes)
- homework assignments (to develop listening, speaking, writing)
- test (at the end of each unit)
- dictionary – 3 languages (Croatian, Spanish and English)



- information about Croatian culture

Regarding the content, the following topics are covered: introducing oneself, asking question about basic personal information, expressing preferences, describing daily activities, telling time, description of a person (appearance, professions...), going out (invitation and acceptance/rejection), ordering in a restaurant/café, phone conversation.

### **Teaching**

The course is based on communicative approach to foreign language learning that includes focusing on form. The main goal of the course is to develop the communicative competence of language users, using authentic language and frequent vocabulary and language structures. Language structures are explained and practiced in context and students are fostered to notice their communicative function and value (focus on form approach). Besides using the teaching materials in Moodle, in order to practice spoken interaction, the course is supplemented by 24 contact hours of online communication in real time (using Skype or Webinar). Several times during the course the team-teaching in Webinar is practiced.

### **Evaluation**

In order to assess the student's progress, several methods are used: self-assessment activities, homework assignments (graded and/or commented), tests/quizzes, teacher observations, final oral and written test. The final grade is a combination of all the listed elements, including student participation. A) Self-assessment – in each unit there are activities for students self-assessment, so that the students can monitor their progress in all phases of the course. The results of the self-assessment tests give teachers an insight into the process of students learning and it is used to tailor the content of the real-time online classes. B) Tests – the content of each unit are assessed by a test for which a student has a limited time and which can be taken only once. The results at the unit tests are counted towards the final grade. C) Teacher observation - due to the specificities of the course (students from different time zones), the real-time online classes are taught by several teachers (all teachers have the access to Moodle as administrators of the course). In order to follow the student's progress a spreadsheet for teachers is designed where they exchange their observations and comments about each student. Also, teachers regularly exchange emails about content and/or issues in online classes and have Skype session/meetings. D) Final exam - the final exam consists of two parts: a written and an oral section. The written section consists of communication questions, grammar and a short composition on a familiar topic. The oral section of the exam comprises of a prepared speech and an interview with the examination committee over Skype or Webinar. All described components of the evaluation make the elements of the final grade.

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate



In HiT-1 course there are two purposes of assessment: formative and summative. Formative assessment is used to follow the students learning progress. For that purpose we use: comments to students assignments, teachers observation during Skype/Webinar classes, results from self assessment activities. Summative assessment is used at the end of each unit by the unit tests which consist of different types of questions: short answers, close questions, multiple choice questions, yes-no questions. The course ends with the final exam that consists of the written part (similar to other unit tests, including a short essay) and oral part (short prepared presentation and a conversation with teachers).

- b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)

Specific objectives and outcomes of a unit are tested by each unit test, i.e. specific communicative tasks and language structure. In Unit 1 assessed is aural discrimination of Croatian sounds, ability of students to produce sounds of Croatian (read the letters using appropriate sounds) and the ability of students to use Croatian alphabet to write the sounds they hear. In Unit 2 assessed is the ability to introduce oneself in written and spoken language (name, last name, age, country of origin). In Unit 3 assessed is ability to use the language for social encounters (greetings, asking and answering personal question when meeting new people in formal and informal situations). In Unit 4 assessed is the ability of students to express their preferences and ask the other about it. In Unit 5 assessed is the ability of students to describe their daily activities and to ask and answer questions about it, as well as to make plans with others about going out. In Unit 6 assessed is student's ability to describe their family and family life, including making short phone conversation. In Unit 7 assessed is student's ability to describe themselves, others and objects around them. The final test assesses all outcomes of the course.

- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

In the unit tests and self-assessment test it is clearly marked what does a specific result mean, including the comments/recommendations for the students. To pass each test a student needs to achieve 50% of the total score. The grade/score is presented after the student finishes the test together with a comment for low scores: 0-50% unfortunately, you did not pass the test. You should revise a lesson. 51-60% - grade 2. You passed the test, but you should practice more; 61-70% grade: 3. This is good; 71-90% grade: 4. You passed the test with a very good result; 91-100% grade: 5, you passed the test with an excellent grade. Congratulations!. All short answers and essays are graded manually and the comment is given to the student in written form or in oral during the Skype session, graded are language accuracy and usage of vocabulary. Errors and mistakes made by using more complicated structures or vocabulary are marked (for the purpose of learning), but not taking into account for the grade. For oral production criteria for grading is the accuracy in pronunciation (is the speech understandable), appropriate usage of language structures and vocabulary covered in the course, ability to understand and answer basic questions, covered in the course.

- d) Please identify who were the assessors: single teacher, multiple teachers, peers, self.  
**(Selection Criteria 4)**

Assessors are all teachers in the course, at the moment 4 of them.

- e) Please describe what type of skills and competences were intended to be assessed by each method/practice **(Selection Criteria 5)**

As explained in previous questions, all assessment practices are used to assess the authentic usage of language (competences needed for real life situations).

- f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement **(Selection Criteria 6)**

Learning outcomes:

1. to introduce themselves in Croatian - test (short essay), teacher observation
  2. to talk about their preferences and daily activities using frequent phrases, basic vocabulary and basic grammatical structures – test (different types of questions), teacher observation, conversation with teachers
  3. to understand written sentences or spoken utterances about basic everyday situations, such as introducing oneself, ordering in the restaurant, speaking about daily activities; making basic phone conversation – tests (different type of questions), teacher observation and communication with teachers
  4. to write short notes or important information – test (short answers)
  5. fill in a form with personal information – teacher observation
  6. to name and recognize some facts about Croatian culture, such as: largest cities, main regions, typical food, historic monuments. – conversation with teachers
- g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner **(Selection Criteria 7)**.

During the course development a special emphasis was given to the fact that at the end of each unit students should be aware of their achievement in a term of what they can express and/or understand in real life situation by using the knowledge and competences they achieved in each unit.



## **Course: Membrane potential**

### **Learning Outcomes**

Students will be able to:

1. understand the importance of establishing and maintaining the potential of the cell membranes through integration of the knowledge from physics, chemistry and biology;
2. distinguish the importance and role of different types of ion channels in establishing the membrane potential and generation and conduction of impulses along the cell membranes;
3. understand and explain the way how excitable cells communicate with each other by transmitting electrical impulses from one to the other excitable cells;
4. use the acquired knowledge for recognizing and understanding the clinical manifestations of the disease (clinical symptoms) caused by disturbances of excitation and conduction of the electrical impulses along the cell membrane of the excitable cells (as clinical models were used: Myasthenia gravis, demyelinating diseases (MS) and epilepsy);
5. solve math problems as a team, to learn how to express conclusions in short and simple way by using arguments and objective indicators.

### **Content**

The course is a small elective course offered six years ago to the students of the first year of Medical school. Five year ago the course was switched from the classical to the blended teaching which allowed us to introduce many changes in the organization of the course. Learning become more flexible in time and space, adapted to different levels of knowledge and different learning styles (listening, viewing, reading). Introduced changes which included a variety of interactive e-contents such as multimedia, self-assessment, forums, interactive texts, animations and simulations facilitated understanding of the content and qualitatively increase the level of acquired knowledge. By fostering different e-learning activities we encouraged students to discover how chemical and electrical gradients across the membrane were established and maintained.

The course is designed to use hybrid e-learning approach which alleviate students to improve their understanding the mechanisms of establishing and maintaining the membrane potential, generating action potential (impulses or signals), propagating of the impulses along the neurons and muscles, recognizing the mechanisms that stays behind the clinical symptoms caused by disturbances of the neural impulses propagation. Additionally, by improving acquired theoretical knowledge we wanted to increase understanding of the clinical manifestations (symptoms) of diseases caused by disorders of excitation and conduction of impulses along the cell membrane. E-learning approach offered us a new and innovative approach for presenting the membrane potential knowledge. Through multimedia and interactive computer simulations we enhanced student's interest and involvement in using new technologies in the learning process that



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ultimately lead to overall raise in the final score of the tests.

For the course purposes we have created an interactive computer simulation program, named “PROSIG”, for studying physiological functions that generate membrane potential. This membrane simulations program allows students to conduct numerous simulations in electrophysiology. Such approach allows students to predict outcomes of changing variables before being given the solution by the program. This develops student's critical thinking and stresses understanding of the subject. In order to keep students motivated and active through the whole course we redesigned our lessons (topics) in a way that students are pushed to use LMS materials all the time; before coming to the lecture/practical room, during the lectures or exercises and after the class.

This course can be adaptable to either an animal/human physiology course, or an introductory course on physics for life sciences.

### **Teaching**

Elective subject is an example of hybrid learning in which the classical form of teaching complements online teaching and learning. For on line teaching we used our own LMS (based on Moodle software platform) modified and customized to fit our needs. For the seminars and the practical lessons of the course we used an interactive computer simulation software package (PROSIG).

Within the course we have used different activities:

- Forums – were used for several different purposes: (i) communication with and between students (ii) discussion forums about the topics which students found that need additional explanation (ii) moderated discussion forums which were used for developing active discussion between students (ii) forums for questions (Q/A) which was used to test new adopted knowledge of the students within basic topics.
- Tests - online self-assessment MCQ tests covering each topic. The purpose was to allow students to check their understanding and newly adopted knowledge.
- Educational games - were generated from MCQ tests and offered to students in addition to MCQ tests. The goal was to additionally motivate students to test their knowledge through games.
- Simulations – were used wherever we could to alleviate students to understand the mechanisms that lie behind a particular process
- Interactive e-texts (html) – we have used html to enrich texts with animations for easier understanding and learning of selected topics. In addition, e-texts were used as interactive tutorials for explaining how to perform interactive simulation exercises (how to use PROSIG’s modules).
- Video – we used multimedia (e-lectures and video presentations) for different purposes: (i) an introductory video on the beginning of each topic we used to explain students what are the key

segments of each topic and to emphasize the connections between new information and the ones from previous topics; (ii) short thematic e-lectures (up to 20 min) were used to explain students the most important part of each topic; (iii) clinical video to present students the important clinical symptoms of selected diseases and how to take physical status and anamnesis; and (iv) selected video presentations (found on YouTube) covering different topics.

- Animation – were used as standalone or included in the e-texts to facilitate understanding of selected processes and mechanisms
- PPT presentations, covering thematic e-lectures, presented as pdf.

### **Evaluation**

During course we used several different assessment methods such as diagnostic, formative, summative, dynamic and synoptic assessments.

The combinations of different assessments were used for each topic (lesson) within the course. At beginning of each lesson the diagnostic assessment was performed. During each topic seminar or practical we used formative assessments to check whether students understand different topics and can accomplish learning outcomes for each topic. After each lesson we used formative and summative assessments to check students understanding of previously completed topic (lesson). Dynamic assessments were used along with using our interactive computer simulation program “PROSIG”. Summative assessment was also set as the thread that runs through the entire course (self-testing by MCQ).

Using these different assessment methods improved the level of adopted learning outcomes and success. In fact, before the introduction of blended teaching the student’s performance at the final colloquium was below 40%, while after its introduction, the performance success raised along with improving the course by new e-content. Current performance success is 100%.

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate

Our assessments had:

- i. *diagnostic purpose* – it provided us with information about each student’s prior knowledge at beginning of each lesson (topic). Knowing students’ strengths and weaknesses allowed us to plan and organize the panel discussion about the topic of the each chapter.
- ii. *formative assessment* - was performed through moderated discussions within the classroom, occasionally through educational games which are typically embedded within each lessons and by simple interactive simulations that are designed to develop logical thinking and reasoning. It provided us the feedback how students accept and understand different topics. We used it to determine which topic has to be addressed to students in more details.

- iii. *summative assessment* – included interactive different self-assessment tests (or educational games) and the “forum’s questions” that measured their understanding of different topics. It also included moderated asynchronous discussion forums in which students were encouraged to debate about just completed a thematic unit, to comment, correct and/or complement other statements and opinions. Online self assessment tests and questions were used for testing student’s mastery of a subject.
- iv. *synoptic assessment* – included modules of our interactive computer simulation program “PROSIG” where each module gave students the base for understanding the following module within the program. Combining the elements of their acquired knowledge from previous modules allowed students to better and easier understand the following topics or subject areas.
- v. *dynamic assessment* – was used within the clinical part of the course where student were given patients with “unknown” diseases that have to be discovered (diagnosed) by recognizing typical symptoms. In this assessment we tested student’s ability to integrate and apply their theoretical knowledge and understanding of the basic membrane potential mechanisms that stays behind different symptoms.
  - b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)
    - a. with diagnostic assessments we assessed a student’s prior knowledge from physics, chemistry and biology courses which lead us to adjust our teaching approach for alleviating their understanding of the membrane potential
    - b. with formative assessments we tested student’s understanding of different mechanisms that stays behind establishing and maintaining the cell membrane, generation of action potential and conduction of the impulses along the excitable tissues;
    - c. combination of different assessment models were continuously to allow students to distinguish better and easier the importance and role of different types of ion channels involved in the membrane potential regulation and to understand and explain the way how excitable cells communicate with each other;
    - d. with synaptic assessment supported by other assessments we tested the ability of students to use the knowledge acquired during course to recognize and understand the clinical manifestations (clinical symptoms) of selected diseases.
  - c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)
    - a. the criteria were teacher’s judgement of the quality of the student’s discussions, its activity and the quality of the practical performance
    - b. in the case of the MCQ test the results were analyzed by using standard algorithms

d) Please identify who were the assessors: single teacher, multiple teachers, peers, self.  
**(Selection Criteria 4)**

- multiple teachers for moderated discussions and forum's questions
- self – self-assessment tests

e) Please describe what type of skills and competences were intended to be assessed by each method/practice **(Selection Criteria 5)**

The goals we wanted to achieve by implementing different methods:

- raise the quality of teaching and allow students :
- to use skills and habits acquired in traditional teaching in e-learning ,
- flexibility in learning ( appropriate personal way of learning ), eliminating time and space limitations in access to learning materials
- encouraging students for independent work and teamwork and to encourage their critical contemplation and reasoning (constructivist approach) :
- solving of problems either individually or as a team
- encouraging active participation in the discussions (moderated discussion )
- encouraging individual and team work in contact with patients (presentation and the presentation of the disease);
- encouraging independent Internet search of medical data (to develop the habit of using the Internet in their daily work - learning);
- integrate and achieve better communication and interaction ( student/student; student/teacher);
- adapt teaching to different styles of learning by introducing the various forms of multimedia content (reading, listening , writing and interactivity);

f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement **(Selection Criteria 6)**

a. summative and synaptic assessment

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner **(Selection Criteria 7)**.

a. all these approaches were complementary to each other. They are narrowly connected and supplemented each other. We adjusted our teaching practices and e-assessments to ensure student's ability to accomplish learning outcomes.

## **Course: Flute teaching methods**

### **Learning Outcomes**

After completing the course student:

- a) is able to independently teach flute playing on basic and advanced level
- b) is able to practically apply and connects the content of music theory, music pedagogy and teaching the main subject
- c) has knowledge about the physiological fundamentals of playing the flute
- d) has knowledge from a didactic point of view about flute literature of different epochs for beginners and advanced students
- e) is able to interpret and transfer ideas about interpretation and performance practice from didactic point of view
- f) is familiar with the educational literature, historical and modern schools for flute
- g) has knowledge about history and characteristics of the flute

### **Content**

Classification of music instruments, basic concepts of acoustics, acoustics of the flute. The historical development of the music instruments in flute family. Principles of producing and maintaining flute.

Physiological fundamentals of flute playing. Breathing and posture. Prevention of professional injuries. Musical and physical predispositions for playing the flute.

Teaching competences, general pedagogical attitude. Communication with students and their parents.

Curriculum and learning outcomes in individual music instrument tuition.

Organization of work, lesson management, educational legislation and paperwork.

Psychological aspects of teaching and learning a music instrument. Motivation, training, public performances, anxiety

Linking practical and theoretical aspect of music performance.

First steps in teaching flute beginners. Work in group, combined classes, chamber music Special didactics - preschool children, students with disabilities, adult students etc.

Performing practice from the pedagogical aspect: ornaments, articulations, cadence, improvisation. Modern playing techniques. German, French, English and American schools of flute playing –tone and performance aesthetics.

Music literature as an educational tool for the outcome. Appropriate teaching music literature for

each level - historical and modern schools.

Lifelong learning in music teaching, further improving of knowledge, literature on methodology and pedagogy, literature

### **Teaching**

Lectures are carried as a combination of classical lecture and e-learning. Since most of the teaching materials are available to students in the e-course, exposed themes are discussed on lectures. Teacher provides additional explanation and reinforcing them by examples. Students are encouraged to take active, critical and reasoned participation in discussions.

### **Evaluation**

Students are encouraged to actively use e-learning. In assessing their general achievement activity on e- course is taken into account. Some of assessed activities are: viewing the content of e-courses, participate in forum discussions, the quality and efficiency of assignments as well as a critical assessment of the assignments of their peers.

### **TALOE specific information**

- a) Identify what was the purpose of the assessment: diagnostic, formative, summative (Selection Criteria 2). If different methods/practice have different purposes, please discriminate

Most of assessments in e- course have formative nature. After completion of assignment appropriate (written) feedback is given to each student. At a beginning of course some assessments have diagnostic purpose to identify level of knowledge of particular content.

- b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (Selection Criteria 1)

Forum discussions – learning outcomes a), b) and e)

Viewing content, assignments c), d), f) and g)

Assessment of written assignments of colleagues a), b), d) and e)

- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (Selection Criteria 3/8)

Because the assessment of students in the e-course has formative nature, the assessment criteria have not been particularized in a way to categorize the student's achievement.

- d) Please identify who were the assessors: single teacher, multiple teachers, peers, self. (Selection Criteria 4)

Single teacher, peers

- e) Please describe what type of skills and competences were intended to be assessed by

each method/practice (Selection Criteria 5)

Critical thinking, competent and argumentative discussion, written skills, problem solving, assessing and evaluation

f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (Selection Criteria 6)

The course in general provides a theoretical basis and practical knowledge necessary for teaching a musical instrument. Through e-course is not possible to determine the exact level of acquired knowledge necessary for the practice. E-course can only partially assess the understanding of the content and the student's ability to apply knowledge to other areas.

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (Selection Criteria 7).

Blend of classical and e-learning provides enough freedom and flexibility to each student to adopt the planned competences and adjust to their individual rhythm of learning. Through written and oral feedback (from teacher and peers), students may examine their progress.



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## **Course: Psychology of education: learning and instruction**

### **Learning Outcomes**

- Compare theoretical models and apply appropriate research methods in the field of teaching and learning.
- Explain the relationship between the characteristics of students, teachers, approaches to teaching and school context and educational outcomes
- Analyse the relationships between the processes of teaching and learning outcomes in specific academic domains.
- Apply some of the major psychological measuring instruments for assessing the characteristics of students and create and apply tools for testing and assessment of academic achievement.
- Create procedures to encourage the development of strategies, learning techniques and teaching skills.

### **Content**

The content of the course are different characteristics of students (ability, cognitive styles, personality traits, learning styles,...), relevant characteristics of instruction (content type, characteristics of teachers, teaching methods, ...)and their impact on learning outcomes

This is the course at the first year of graduate studies in psychology. It is attended by 85 students, future psychologists.

### **Teaching**

The course consists of lectures for the entire group of students (total 30 hours) and practices held in groups of 28 students (total 30 hours). Practices are held at the university premises but also in schools and / or kindergarten.

### **Evaluation**

The accomplishment of the outcomes is monitored through exit-logs during the lectures, homework (e-learning platform based on Moodle - Omega), colloquiums- preliminary exams, the evaluation of the work during the practical classes, and oral exam.

The purpose of the exit-logs is the formative one, while other assessment methods/practises have summative purpose. We use homework to check student's comparisons of theory models and ability to apply corresponding research methods in the field of learning and instruction. Homework is assessed by two examiners.

Colloquiums are used to check student's ability to explain the relationship between the characteristics of students, teachers, approaches to teaching and school context and educational



outcomes and to analyse the relationships between the processes of teaching and learning outcomes in specific academic domains. Colloquiums have clear and published criteria for marking.

During the practical classes teachers and peers check the exercises and we conclude whether the student is able to apply some of the major psychological measuring instruments for assessing the characteristics of students. During these practices students create and apply tools for testing and assessment of academic achievement.

During the oral exam students have to explain the relationship between the characteristics of students, teachers, approaches to teaching and school context and educational outcomes, to analyse the relationships between the processes of teaching and learning outcomes in specific academic domains. They also have to demonstrate ability to create procedures to encourage the development of learning strategies, learning techniques and teaching skills. Assessor is single teacher.

Through teaching and monitoring it is required that a student offers his/hers own solutions. These solutions include the student's independent work on the literature search, and devising solutions to homework. During the monitoring of the accomplishment in practical classes the student is required to prepare and perform the authentic tasks of school psychologists, and on the oral exam students are required to create proposals for solutions of some problem situations encountered by school psychologists.



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## **Course: Diseño y evaluación de programas y proyectos (Design and evaluation of programs and projects)**

### **Learning Outcomes**

- a) Be able to define and manage basic concepts relating to the design and evaluation of projects and programs
- b) Identify the project cycle and know the basic steps in the design and evaluation of projects
- c) Know the specificities of objective-oriented projects
- d) Manage terminology and tools of the logical framework approach (LFA)
- e) Know and analyze tools for design and evaluation of projects
- f) Manage participatory methodologies
- g) Design intervention projects
- h) Evaluate intervention projects

### **Content**

The course is an approach to the design and evaluation of projects, with particular emphasis on the knowledge of the overall process and the management of tools for the design, management and evaluation of projects. It is a mandatory course in the practical itinerary of the Master programme, and an elective course in the research itinerary. It is scheduled in the first semester of the Master programme and is a part of module III (scenarios and practices). Module I refers to conceptual aspects and Module II refers to methodological aspects.

The contents of the course are organised in three blocks:

- Basic concepts about design and evaluation of programs and projects
- Cycle of the project. Stages in the design and evaluation of projects
- Tools for design and evaluation of projects

### **Teaching**

The Master is taught in Spanish in distance mode: all courses are developed through the UNED virtual platform, aLF ([www.innova.uned.es](http://www.innova.uned.es))

The following training activities are developed:

- Comprehensive reading of study materials
- Use of additional resources and sources of information
- Access and participation in discussion forums



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- Collaborative work through the use of ICT
- Resolution of tasks and application of acquired knowledge: definition of concepts, case studies (individual and / or collaborative way), project design, project evaluation

The course follows this calendar and tasks:

Calendar	Readings	task 1: on-line tests	task 2: project design	task 3: project evaluation
Month 1	Basic materials, blocks I and II	On-line tests (3 tests in different dates)		
Month 2				Case study
Month 3	Basic materials, blocks I, II and III		Project draft	
Month 4	Basic materials and additional readings (optional)		Project design (final version)	
Month 5				Self-assessment of own project and assessment of a colleague project (co-evaluation)

Participation in forum in the virtual platform is a cross task throughout the course.

## Evaluation

### Task 1: On-line assessment about basic content

The first activity is implementation of evaluation activities in the virtual course on basic concepts. It is self-assessment tests available on certain dates which address the basic content readings of the three thematic blocks.

The objective of the activity is to know specific vocabulary related to the design and evaluation of programs and projects and to manage basic or new concepts in relation to it (*learning outcomes a, b, c, d*).



Each student is expected to participate in the on-line assessment activities by following these steps:

- Read, check and handle basic readings.
- Respond to evaluation tests on the specified dates for each reading or topic.
- Check or comment in the forum on any questions or insights around the basic concepts.

Each test is available during 15 days, and 3 attempts are allowed. Questions include multiple choice questions (some with one correct answer and some with more than one correct answer), and open questions.

Individual commitment of 20 hours of work is estimated.

For the evaluation of the activity, which represents up to 20% of the final grade in the course, the following criteria are considered:

- 1) Assimilation of content.
- 2) Mastery of fundamental concepts and specific vocabulary.

#### Task 2: Design of an intervention project

This activity involves the design of a project following the guidelines outlined in the consulted basic readings. The theme is free.

The objectives of the activity are: to identify the project cycle and to know the basic steps in the design and evaluation of projects, know the specificities of objective-oriented projects, manage terminology and tools of the LFA, know and analyze tools for the design and evaluation of projects, manage participatory methodologies and design intervention projects (*learning outcomes b, c, d, e, f, g*).

Each student is expected to design, individually or in groups, a project by following these steps:

Submit an outline or draft setting out the purpose of the project and the basic structure, during the 2nd-3rd month of the course. Templates are provided.

Given the comments and rating of the professor, design a project taking into account the phases of the cycle and the inclusion of tools from block III. The final draft will be delivered 15 days before the end of the course. Templates are provided.

A commitment of 50 hours of work is estimated: 10 hours for the draft and 40 for the entire project.

For the evaluation of the activity, which represents up to 45% of the final grade in the course (15% the draft and 30% the final project), the following criteria are considered:

- 1) Use of the course contents.
- 2) Mastery of fundamental concepts and specific vocabulary.
- 3) Logical structure of the project, internal consistency.
- 4) Originality.



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- 5) Application of knowledge to the improvement of social reality.
- 6) Adjustment of the used sources and correction in quotes and references.

### Task 3: Evaluation of projects

This activity consists in evaluating different projects, following the guidelines outlined in the consulted basic readings.

The objectives of the activity are: ability to define and manage basic concepts relating to the design and evaluation of projects and programs, know and analyze tools for design and evaluation of projects, manage participatory methodologies and evaluate intervention projects (*learning outcomes a, e, f, h*).

The activity consists of two parts:

- Perform at least three evaluative comments on the "case study" forum about a project proposed by the professor, during month 2.
- Evaluate one final project prepared by a peer, and the own final project (self-assessment) in month 5. An assessment template/rubric is provided.

A commitment of 30 hours of work is estimated: 15 hours for the analysis of the case and 15 for evaluating the final projects.

For the evaluation of the activity, which represents up to 35% of the final grade in the course (15% case, and 20% final projects), the following criteria are considered:

- 1) Use of the course contents.
- 2) Mastery of fundamental concepts and specific vocabulary.
- 3) Consistency of the analysis performed.
- 4) Accuracy in valuation.
- 5) Application of knowledge to the improvement of social reality.
- 6) Adjustment of the used sources and correction in quotes and references.

### **TALOE specific information**

a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate

The purpose was mainly formative and summative. The tasks contribute to the final mark in the course (summative) and are, at the same time, designed as learning activities (formative).

b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)

Assessment practice 1: on-line tests

LO assessed: *a, b, c, d*



Assessment practice 2: project design

LOs assessed: *b, c, d, e, f, g*

Assessment practice 3: project evaluation

LOs assessed: *a, e, f, h*

c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

The criteria used for assessing each task (see question 5) are known by the students, as they are clearly presented in the syllabus and in the virtual course. Each task is marked from 1 to 10 (5 required to pass the activity). The weighing of each task in the final mark is also known by the students.

d) Please identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)

Assessment practice 1: on-line tests

Teacher, self

Assessment practice 2: project design

Teacher, peers, self

Assessment practice 3: project evaluation

Teacher, peers, self

e) Please describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)

Assessment practice 1: on-line tests

This task is focused in assessing conceptual aspects, use of appropriate vocabulary.

Assessment practice 2: project design

This task focuses on designing and original project with the support of the course materials, the teacher comments, self-reflection and peers judgment.

Assessment practice 3: project evaluation

This task puts into practice analytical skills

f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (**Selection Criteria 6**)

The use of a diverse range of assessment methods contributes to the evaluation of the different learning outcomes, as stated below.



*a) Be able to define and manage basic concepts relating to the design and evaluation of projects and programs*

on-line test / project evaluation

*b) Identify the project cycle and know the basic steps in the design and evaluation of projects*

on-line test / project design

*c) Know the specificities of objective-oriented projects*

on-line test / project design

*d) Manage terminology and tools of the logical framework approach (LFA)*

on-line test / project design

*e) Know and analyze tools for design and evaluation of projects*

project design / project evaluation

*f) Manage participatory methodologies*

project design / project evaluation

*g) Design intervention projects*

project design

*h) Evaluate intervention projects*

project evaluation

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).

Students are involved in the learning and assessment activities throughout the course. Autonomy, creativity and collaboration are encouraged in the diverse tasks.



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## **Course: Sistemas Informáticos II (Computer Systems II)**

### **Learning Outcomes**

- a) Practical aspects in the analysis of knowledge acquisition specifications and techniques.
- b) Knowledge of the practical issues associated with Knowledge-Based System (KBS) development environments.
- c) Application of the techniques and methods of validation and evaluation of KBS to specific cases.

### **Content**

Given the practical nature of this course, the contents of the program are aimed at the description of applications, utilities and programming libraries (libraries) related to Knowledge-Based Systems (KBSs) and Artificial Intelligence (AI) in general.

The course is focused on practical skills. It includes a brief theoretical section that covers the following topics:

- Knowledge acquisition and representation
- Possible solutions searching techniques in space
- Reasoning and inference systems based on rules and cases
- Intelligent agents and robotics
- Most of the content is oriented to the preparation of a mandatory individual practical activity using Robocode software.

### **Teaching**

The course is taught in Spanish in distance mode through the UNED virtual platform, aLF ([www.innova.uned.es](http://www.innova.uned.es)). It is taught in the last year of the graduate programme and has a practical focus, so most of the conceptual contents are not included in the course as they have been studied in previous courses. This is clearly addressed in the study guide.

The study guide, available in the virtual course, thoroughly describes the content and the requirements to reach the objectives. It contains the theoretical review readings and the guidelines to successfully undertake the practical activity.

The activity is *the* focus of the teaching and evaluation process.

### **Evaluation**

#### **Task 1: Practical activity**

The practice implies to write a program to control a robot in a sandbox to compete against other robots according to a predetermined scoring system and to overcome some preset specific robots.

The software is Robocode. The program has to be accompanied by a descriptive memory of the practice, including structure of the program, functions, decisions made when designing the robot, etc.

The objectives of the activity are the following:

- Learn to use Robocode: environment, documentation, score system, restrictions, typical strategies, etc.
- Analyze basic opponent robots (established by the professor) and search for strategies to counteract.
- Analyze other programs and suppose typical strategies (and search for those to counteract).
- Design, implement and prove a program (until beating the basic robots).
- Analyze the solution and try possible improvements (maintaining the achievements in previous point).

The robot program each student designs is run by the professor in Robocode, so each robot fights against those robots established by the professors (stage 1, to reach a minimum in the activity) and with other robots programmed by other students (stage 2, which leads to a competition and a ranking).

Stage 1: Each robot fights against 3 basic robots established by the professor. The characteristics of these basic robots are known by the students (specifications detailed in the study guide). The students get 4 points, the required minimum to pass the activity, if his/her robot wins the other three robots in a 10 round battle (*melee* mode). Students can test their robots in their own computer before sending the program to the professor.

Stage 2: Each robot fights against other students' robots that have passed stage 1, in a competition run by the professor. Unless the basis robots in stage 1, other students' robots are unknown, so programming need to take into account a wide range of possible robots against whom to win in a battle. The competition leads to a ranking of robots/students based on the score in Robocode, thus in the efficiency of each robot to win other robots. This ranking is converted into marking points (from 0 to 5,5) to be added to the 4 points already got by each students in stage 1.

The 0,5 remaining points can be ascribed by the professor after reviewing the descriptive memories and the source of the programs.

The activity weighs 60% of the final mark in the course.

### Task 2: Exam

The 1 hour exam, developed in any of the UNED regional centers, consists on a test with theoretical and practical questions about basic contents of the course and about the practical activity developed by the student. A mark of 6,5 over 10 is required to pass the exam.

The exam weighs 40% of the final mark in the course.

The exam relates to *learning outcomes a, b*.

### TALOE specific information

a) Identify what was the purpose of the assessment: diagnostic, formative, summative (**Selection Criteria 2**). If different methods/practice have different purposes, please discriminate

The purpose was mainly formative and summative. The tasks contribute to the final mark in the course (summative) and are, at the same time, designed as learning activities (formative), specially the practical activity. The activity puts into practice knowledge acquired in previous courses in the graduate programme.

b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. (**Selection Criteria 1**)

Assessment practice 1: practical activity

LO assessed: *a, b, c*

Assessment practice 2: exam

LOs assessed: *a, b*

c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

The criteria used for assessing each task are known by the students, as they are clearly presented in the study guide and in the virtual course.

Each task is marked from 1 to 10 (4 required to pass the activity; 6,5 required to pass the exam). The weighing of each task in the final mark (activity 60%; exam 40%) is also known by the students.

d) Please identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)

Assessment practice 1: practical activity

single teacher, self, peers (through comparison)

Assessment practice 2: exam

single teacher

e) Please describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)

Assessment practice 1: practical activity



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Skills and competences: problem solving with some given knowledge and some uncertain parameters (like real problems); practical computer system skills (including KBS and AI).

Assessment practice 2: exam

Skills and competences: conceptual knowledge.

f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement (**Selection Criteria 6**)

The use of a diverse range of assessment methods contributes to the evaluation of the different learning outcomes, as stated below.

a) *Practical aspects in the analysis of knowledge acquisition specifications and techniques.*

practical activity / exam

b) *Knowledge of the practical issues associated with Knowledge-Based System (KBS) development environments.*

practical activity / exam

c) *Application of the techniques and methods of validation and evaluation of KBS to specific cases.*

practical activity

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).

Students are involved in the learning and assessment activities throughout the course. Autonomy, creativity and problem solving are encouraged in the practical activity.

## **Course: Lingua e Traduzione Inglese I (English Language and Translation I)**

### **Learning Outcomes**

- Awareness of linguistic features of selected registers of contemporary English.
- Level B1+ language skills, according to the Common European Framework of Reference for Languages (Council of Europe).
- Focus on metalinguistic competence and the development of strategies for language learning

### **Content**

#### Part A.

##### "An Introduction to Academic Language Skills"

The course aims to give students the notions and tools necessary to recognise and use various registers and genres and to help students develop their written skills.

There is also a focus on the following competences:

- use of a monolingual learner dictionary;
- use of linguistic corpora and software for lexico-grammatical analyses.

Students are also expected to produce texts using software for computer-mediated communication.

#### Part B.

##### "General English"

The "General English" lessons are held both in the classroom and language lab. In the classroom there is a focus on general language skills. In the language lab the focus is on listening comprehension and writing skills. Use is made of software for computer-mediated communication and other University Language Centre resources.

### **Teaching**

Both parts of the course (A & B) consist of a blend of lessons in the classroom, language lab and self-study (online). In Part A there is a combination of lectures and group activities. Students also gain hands-on experience of using linguistic corpora through concordancing software. Part B is more predominantly based on group work. Students attending the course are expected to actively participate in all classroom and lab activities which include group work and discussion with peers. These activities may be carried out both face-to-face and via software for audio- and text-based computer-mediated communication.

Students are expected to use a range of materials including textbooks, authentic online resources, a reference grammar, learner dictionaries and the European Language Portfolio.

An emphasis is placed on both autonomous and collaborative learning. Lessons are taught in English.



## Evaluation

At the beginning of the course, all students took an online placement test (in Moodle) to enable teaching staff to assign them to level-appropriate classes. Short answer questions (based on lexicogrammatical competence, pragmatic competence and listening skills) were marked automatically; a written text was marked by the teachers. The written text that students are asked to produce depends on the score they obtained in the short answer part of the text. The written task that they are given, then, depends on their linguistic competence.

### Assessment for the purpose of awarding a final score for *Lingua e Traduzione Inglese I*.

Part A:

a. short answer and multiple choice questions based on course content (on paper). Students are assessed on their knowledge and understanding of the content covered in the course

b. Production of a written text based on the features of one of the registers studied in the course (in Moodle, marked by the lecturer). The candidate summarises a series of forum messages in the form of a 'public opinion survey report'. The messages to be summarized are selected from those produced by the students in informal forums in Moodle during the course. For this part of the exam, students can use learner dictionaries (books or on-line) and concordancing software to use a corpus for reference.

Students are assessed on their ability to write a brief report to a standard conventionalized format, which passes on factual information and/or opinions. In particular assessment is based on:

- Accuracy of language;
- Use of appropriate register (i.e. grammar, lexis and phraseology);
- Cohesion and organisation of text;
- Meaning transfer;
- Task fulfilment.

For part A, students also have the opportunity to do coursework which is submitted online. This includes 3 assignments and participation in online class debate forums (in Moodle), the topics of which are decided by the students. A total of 2 bonus points may be awarded for good work. These are added to the score of the exam for Part A.

Part B:

1 written test (in Moodle), including:

A lexicogrammatical part with multiple choice/fill-in-the-blank items (automatic marking).  
Assessment is based on students' lexicogrammatical competence

A listening report - candidates write a text based on an audio file (marked by multiple teachers).  
Assessment is based on the candidate's listening and writing ability at B1+ level. This includes the ability to:

- understand the main elements and details of radio items and recorded audio;
- write straightforward texts and simple essays/reports;



- summarize, report and give an opinion about factual information/material heard in an audio file.

For Part B, students who regularly attend lessons have the opportunity to choose the 'coursework' or continuous assessment option. This includes the production of regular online learner diaries, regular online listening reports, two assessed assignments (produced online) and an oral component (part of which is recorded, uploaded into Moodle and assessed by the teacher online). Students who choose this option do not take the final test for General English.

### **TALOE specific information**

The placement test at the beginning of the academic year is for diagnostic purposes. The results of the test are used to identify the level of the students and place them in the most appropriate class. Students may also contact the teaching staff to discuss their weaknesses before or at the start of the course.

The coursework options for both Part A and Part B of the course are for formative purposes. In Part A, scores are awarded that give the students an indication of their progress, though these scores do not necessarily influence the final score. Scores for coursework in Part B count towards the final score.

The final exams for both Part A and Part B of the course are for summative purposes. N.B. for Part B, students who choose the coursework option do not do the final exam.

Depending on the student's participation during the course, the final scores may be based purely on summative assessment, or on a combination of formative and summative assessment.

### **Learning outcomes assessed**

The placement test assesses students' learning of English before the beginning university (therefore language learning through formal teaching at school, or acquisition through other experiences such as holidays, work and contact with other speakers of English).

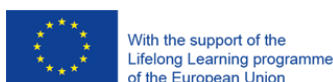
For Part A of the course, the production of the online written text assesses students' ability to put into practice the skills (ability to use a learner dictionary and concordancing software) and concepts (register, genre) dealt with in the course as well as their language accuracy. It can be seen as holistic assessment. Writing skills are assessed.

In Part B both writing and listening skills are assessed. Oral skills are assessed in a face-to-face context, however, as already stated, online oral assessment is part of the coursework option.

Learning outcomes of Part A: Awareness of linguistic features of selected registers of contemporary English; Focus on metalinguistic competence and the development of strategies for language learning Level B1+ language skills. Single teacher assessment.

Criteria for marking established in course description.

If students choose to do coursework for Part A, the tasks involve single teacher assessment, and informal peer assessment and self-assessment (scores are not awarded by peers).



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Learning outcome of Part B: Level B1+ language skills. Multiple teacher assessment. The standards are those set out in the Common European Reference for Languages and the Appendix of the European Language Portofolio. However, a scoring grid is needed for this part of the exam.

### **e-assessment strategies**

Part A: assessment of written report produced online using online tools (online learner dictionaries and concordancing software).

Part B: multiple choice and cloze tests with automatic correction; online listening test with written report; submission of voice recording online (for coursework option).

### **Integrate assessment with teaching and learning and involve students as active participants**

Considerable efforts are made to integrate assessment with teaching and learning.

For example, as mentioned above, for the exam in Part A, the candidate summarises a series of forum messages in the form of a 'public opinion survey report'. The messages to be summarized are selected from those produced by the students in informal forums in Moodle during the course. So effectively the students are involved in producing part of the exam. The task also encourages peer collaboration.

The coursework option (part A) encourages students to reflect on their language skills and to cooperate with peers (autonomous/collaborative learning). For one assignment, students cannot submit their final piece of work without having first reviewed a peer's work online.

Most attending students choose to do coursework for Part B. To qualify to do coursework rather than the final exam, they must regularly write in an online learner diary, keeping a record of their language learning activities beyond those suggested by the teacher and their progress. This activity is designed to encourage learner autonomy.



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## **Course: Social psychology**

### **Learning Outcomes**

- Development of critical skills in the analysis of relevant social phenomena, such as racism, sexism and, more in general, intergroup discrimination.
- Analyse how cognitive processes shape the way we perceive the social world and influence our behaviors towards other social actors.
- Understand and create experimental designs for the study of human social behaviour.

### **Content**

Present the major theoretical approaches to the study of person perception, interpersonal relations and intergroup dynamics. A strong emphasis is given to methodological issues and to the role of cognitive processes as key factors that affect the way we navigate within our social environment. This is a first year course, delivered in the first semester, and it thus represents the initial approach to scientific psychology for most of the students.

### **Teaching**

Importantly, the course is entirely delivered online (through Moodle), although its structure resembles a traditional course. Overall, about 120 students are enrolled. Most students are workers.

The course consists of around 30 video-lectures (20-30 minutes each) and a series of online activities, such as the participation in discussion forums, or the participation in simulated experimental situations that are later discussed in the virtual class.

### **Evaluation**

The accomplishment of the outcomes is first monitored through the analysis of students' active and incisive participation in the forums moderated by the teacher. The ability to connect conceptual knowledge to real life situations is particularly valued.

The learning of methodological aspects is assessed through the capacity to uncover the shortcomings of some existing studies as well as the capacity to appreciate the meaning of experimental manipulations within each study.

Students can also monitor their level of knowledge thanks to online tests (e.g., multiple choice) that provide immediate feedback and, most importantly, thanks to peer-evaluation procedures. Students have the chance to answer to open questions related to the key contents of the course and receive detailed feedback (corrections, comments, suggestions) from some of their peers. The teacher and a tutor do supervise all these activities.

Grading is based on the final exam that takes place in presence.



### **TALOE specific information**

a) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. **(Selection Criteria 1)**

Participation in simulated experimental situations, Participation in the forums, online tests, Open questions: Development of critical skills in the analysis of relevant social phenomena, Analyse how cognitive processes shape the way we perceive the social world and influence our behaviours towards other social actors. Understand experimental designs for the study of human social behaviour

b) Please identify and describe what were the criteria used to mark the results of each e-assessment practice **(Selection Criteria 3/8)**

Participation in the forums: analysis of students' active and incisive participation



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## **Course: Pharmacology I**

### **Learning Outcomes**

Learning outcome	E-assessment method
LO1: Understand the general mechanism of action of medicines	Multiple-choice queries for training and study guidance
LO2: Understand the principles that guide the choice of dosage	Multiple-choice queries for training and study guidance
LO3: Know the actions, good or bad, of medicines that act on multiple systems	Multiple-choice queries for training and study guidance
LO4: Apply pharmacology to medical decisions on therapeutics	Multiple-choice queries for training and study guidance

### **Content**

The syllabus has two parts: general pharmacology (very useful principles that can be applied to understand many actions of specific medicines; very useful principles that can be applied to understand the dosage and administration route of many specific medicines); specific pharmacology of medicines that act on multiple organs and systems (hormones, antibacterials, pain medicines, medicines that modify peripheral nervous system regulation, poison antidotes). Specific medicines for each organ (heart, kidney, gastrointestinal tract, central nervous system, etc.) are part of Pharmacology II, delivered in the second semester. Therapy is part of General Therapeutics and Clinical Pharmacology delivered in clinical years of the medical course.

### **Teaching**

Blended teaching and learning. Lecturing and exercises of problem-solving in medicine based on pharmacological grounds.

### **Evaluation**

Summative assessment is done by multiple-choice tests delivered on computer (maximum score 19 points on 0-20 scale). Item construction is based on the guidelines of the National Board of Medical Examiners. Quality assessment of each item is done before and after testing. Edumetric assessment is based on the classical theory of tests because the sample is not large enough for item-theory analysis. Due to the limit number of rooms with computers students are randomly ascribed to turns (60 students each). Different forms of the test are equated by the circle-arch method. Items that fail to pass edumetric assessment are removed. A small score (1 point in the 2-20 scale) is given if a portfolio is presented.





### **TALOE specific information**

- a) Identify what was the purpose of the assessment: summative.
- b) For each assessment practice identified in 5. please describe what was the learning outcome: items of the multiple-choice test try to assess LO1, LO2, LO3 and LO4 emphasizing the medical application (problem-solving)
- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice: formula scoring for random guessing is applied to each form of the test (question have either 4 or 11 distractors); equating among different forms of the test is done by the circle-arch method taking the easiest form as reference (scores for all students are either maintained or increased)
- d) Please identify who were the assessors: multiple teachers that contribute to the design of items
- e) Please describe what type of skills and competences were intended to be assessed by each method/practice: skill and competences to select a proper medication
- f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement: since multiple-choice items are used, a strong effort is put on the construction of items, mainly to try to put real medical problems
- g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner: unfortunately due to the very large number of students (350) there is no chance to promote individualized teaching; decent methods of mass teaching are used.



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## **Course: Coaching and Leading the Human Side of Organizational Change**

### **Learning Outcomes**

This course is designed to assist students to:

- evaluate the multi-dimensional nature of organizational change,
- explain political, economic, technological, and sociocultural influences on organizational change,
- appraise the influence of overt and covert aspects of organizational life on change,
- apply hard and soft systems models of organizational change to real-life case situations,
- summarize key trends that may prompt micro and macro level organizational change in the future, and
- debate the influence of ethics on organizational change.

### **Content**

Change within organizations has become the norm. Heraclitus, an ancient Greek philosopher, said, "You can't step twice into the same river." Sometimes as the changes bombard you from all sides it feels as if you will be swept away in that very river! Think of your own organization. How many changes did you deal with today?

The answer to that question probably surprised you! We are confronted daily with changes in our organization. Many times we juggle planning for a change, initiating a second change, facilitating a third, while we "cement in" yet another change. At the same time we are coaching, leading, and guiding those who have been traumatized by one or all of these changes, calming the fearful, reassuring the confused and disheartened, and "unsticking" the resistant.

As organizational leaders we set off to work each day with the vision of transforming the "swamps" in our organization to a virtual "oasis"! No wonder we often go home with our heads spinning! How do we take care of ourselves in this world of chaos and confusion while helping those in our organizations to thrive? Throughout this course and hopefully together, we will uncover some answers to these questions.

### **Teaching**

This is an **asynchronous** online course. This means that there is no established time when students must log on; however, the instructor will expect to "hear" from each person at least 2 times during each week of the course. Each Monday, the instructor makes an online presentation relating to the topic of the week. This presentation sets an outline for the online discussion. The activities each week are organized in three parts, a "warm-up," a "work-out," and a "cool-down" section. The warm-up will be an activity or story that will get students thinking about the topic. The work-out is

the main learning activities which could include any of the e-evaluation activities described below - a case to discuss, a debate topic to consider, a game to play, etc.. The cool-down is a summary or thought-evoking statement about the topic of the week.

The assignments and learning activities in this course will give students the opportunity to:

- describe a case from their own experience where an organizational change was attempted or implemented,
- analyze their own change case using both additional references and the knowledge and skills gained during the course,
- collaborate with others in the class to study a particular area of organizational change in depth and present this to their classmates, and to
- participate in meaningful discussions with other class members around the topics outlined in the course postings and course readings.

### **Evaluation**

In this course a combination of diagnostic, formative and summative e-assessment methods and practices were used. We focus first on the formative and diagnostic e-assessment methods (non-graded) in this discussion as they are more unique and perhaps useful to other educators. Each unit of the course includes 4 to 7 of these formative assessment strategies and students choose two that are most in line with their learning goals personalizing the assessment. Here are some examples of e-assessment strategies.

### **Conceptual Quilting Exercise**

Students are invited to become conceptual quilt-makers. They review their course materials and decide which major concepts, theories, ideas, and metaphors in this course made an impression on them and are worth holding onto and incorporating into their practice. Students then arrange these into a quilt pattern. Students design their own conceptual quilt and share it with their classmates by posting the virtual quilt in an online discussion forum we call a quilt gallery. All members of the class then can “walk” through the gallery and view the quilts.

Students use whatever program they like to develop their quilts. Students who are more comfortable with words that images and graphics design word quilts. Teachers reviewing the quilts can assess what content of the course has had the most impact on learners and can determine in students have made links and associations among theories and concepts presented.

### **Art 101 - Developing a Rich Picture of Changes in an Organization**

Rich pictures are described in the course textbook as a tool for helping people to depict how they perceive a situation they are in that needs to change. Students are invited to try their hands at constructing rich pictures about such change situations they are familiar with. Students then post their pictures for the class to view. Class members review the rich pictures and attempt to comprehend the thoughts and feelings that are presented in each image and they share their

interpretations with the class. The artist responds to these posts and discussion of change concepts results. As an e-assessment tool the images posted and the discussion that follows both provide insight into the level of understanding of change theory and concepts.

### **Photovoice**

Students are provided with an image as asked to answer a reflection question related to the image. In this example, the focus the unit was on how organizational culture influences organizational change processes. Students are invited to view the image and answer the following question in the class discussion forum. Students are reminded that there are no right or wrong answers to a photovoice question.

**Question** - What does this image teach us about external forces that influence change?



Photovoice provides teachers to assessment the students' prior knowledge about a topic if the activity occurs early in a unit. It also facilitates insight into the depth of understanding and analysis students have achieved about course themes, concepts and theory as they must apply these to their analyses of the photo.

### **One Minute Self-Debate**

The activity begins with this sentence - Let's start with a one-minute do-it-yourself debate (this may be a perfect example of our "hurry up" society!).

Students are then given the following steps to follow to engage in the one minute debate with self.

Here are the steps to follow...

- Choose one of the following propositions - a) "In times of change, conflict between individuals and groups is inevitable" or b) "If managed well, conflict can add substantial value to change processes."
- Agree with the proposition you choose and write down one point for your side (the affirmative).

- Disagree with the proposition and write down one point for your other side (the negative).
- Rebut yourself a few times, and then share your best point with the class in the **forum**.

The self-debate postings provide teachers with insight into the level of analysis of course content achieved.

### **Buzz Group on Organizational Development (OD)**

Students are asked to contact one another through the course mail feature and form a small buzz group by connecting with 2 or 3 of their classmates. Students agree to meet and chat about the OD approach to change. They use any meeting program they all agree to. As a group they compose a brief one paragraph description of their most poignant or brilliant group insight and share this in the class e-forum. Full class discussion often results from these postings. Instructors gain insight in the student understanding of the OD approach to change and also some information regarding collaboration and leadership skills.

### **Summative E-Assessment Methods**

In addition to the formative assessment strategies this course also includes the following graded summative e-assessment methods. Grading marking criteria are provided to students for each of these assignments.

#### **Assignment 1: Case Study Document | 20% | Due: Week 4 |**

Students select a real case from an organization they are familiar with. This case should focus on the planning and implementation (or attempted implementation) of an organizational change. Using a narrative format students write the events of the case including the key players involved. This case is then analyzed by the student in assignment 2.

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#### **Assignment 2: Case Study Analysis | 40% | Due: Week 13 |**

Students use concepts and models discussed in class, and in the readings, and apply these to their case. This analysis should be detailed enough to be useful to an administrator reviewing the case. Your document should help the person reading the analysis to determine what happened, what went well, and what could or should have been done differently to improve the outcome. There should also be informed discussion included in the case analysis related to why the change process unfolded the way it did. The major points in the analysis should be referenced to class readings/discussion or to additional research from outside of the course requirements. A minimum of 5 references should be used, some of which are beyond those provided in class.

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#### **Assignment 3: Group Presentation | 30% | Due: Week -variable - negotiated with instructor early in course |**

Working in small groups students select one aspect of organizational change that they would like to investigate in more detail than is included in the course. After setting specific objectives for the





presentation, group members collaborate to post a presentation that assists their colleagues to achieve these learning objectives. Materials are presented in a format and medium that captures the interest of classmates and results in informed dialogue and discussion. The presentation should include specific activities for classmates (questions to be answered, cases for discussion, debate topics etc.). Those who are presenting are responsible for following up their classmates' responses, summarizing these, and encouraging further discussion. Evidence of group collaboration through a variety of voices and perspectives is highly regarded.

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### **Participation | 10% | Due: throughout |**

Class participation is an essential component of this course. To score full marks on class participation, students are asked to actively engage in the learning activities making related postings least twice per week. Comments most highly evaluated are those relevant to the topic and presented in a way that expands our understanding. You may accomplish this by challenging a statement (in a humanizing way!); by posing thought-evoking questions; providing examples of a concept being discussed; or by providing additional references or resources that will assist classmates in deepening their understanding of a concept under discussion. Participation that has a positive tone and is shared in a supportive and respectful way is most desired.

#### **TALOE specific information**

a) Identify what was the purpose of the assessment: diagnostic, formative, summative  
**(Selection Criteria 2).**

A combination of formative, diagnostic and summative assessment strategies were used in this class. The first group of activities described were used of formative and diagnostic evaluation purposes. The second group of strategies described are the summative assessment strategies used.

b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed. **(Selection Criteria 1)**

The formative and diagnostic assessment practices identified are a sampling of the total strategies used in the course. Each of these help propel students toward greater insight and understanding of course concepts that is fundamental to achieving the course learning outcomes. In addition most of the strategies in the first grouping require students to engage in self-reflection related to course content and analysis of course content in order to participate fully in the assessment exercise. This also moves students systematically toward achieving the course learning outcomes.

The summative evaluation strategies described are more clearly linked to assessing achievement of the learning outcomes. For example, the case study analysis requires students to demonstrate to some extent all of the following in their analysis:

- evaluate the multi-dimensional nature of organizational change,
- explain political, economic, technological, and sociocultural influences on organizational

change,

- appraise the influence of overt and covert aspects of organizational life on change,
- apply hard and soft systems models of organizational change to real-life case situations,
- summarize key trends that may prompt micro and macro level organizational change in the future, and
- debate the influence of ethics on organizational change.

In the group presentations and class participation student further demonstration of their achievement of the learning outcomes.

c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

The formative and diagnostic e-assessment activities were not graded. Part of the teaching philosophy behind the course is that student should be encouraged to take risks and be creative in their participation in the course. Making activities such as photovoice and conceptual quilting non-graded provides a learning environment where students feel more comfortable participating in assessment strategies that are different from what they are familiar with.

Students are provided with general grading criteria for each of the summative evaluation approaches as well as clear expectations regarding element of each assignment (eg. length, format, etc.).

### **General Grading Criteria for Assignments**

#### **Content and Writing Style**

Written assignments will be evaluated on the basis of two characteristics:

- Is the content of the paper complete and accurate?
- Is the writing style of the paper scholarly, to a level expected of a graduate program?

#### **Content**

The expectations for content are explained in detail in each of the assignments. You must address the requirements of the assignment completely and accurately in order to receive marks for your assignment.

#### **Scholarly Writing**

- The expectations for scholarly writing are as follows:
- The paper is structured according to APA format, with a title page, abstract, untitled introduction, body organized by appropriate headings, conclusion, references, and appendices if needed (see below for more information on APA format).



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- Spelling and grammar are correct.
- Ideas are clearly articulated with effective communication of interpretations and conclusions.
- Information is well organized, such that logical links are evident within paragraphs, within sections, and among sections of the paper.
- Relevant evidence is used to support statements and is accurately cited and referenced (see below for more information on adequate referencing).
- The paper shows evidence of:
  - critical thinking, including analysis and synthesis
  - integration of theory and personal experiences
  - original thinking

### **Adequate Referencing**

The above criteria for a scholarly paper indicate that you are required to support statements with relevant evidence. Referring to evidence shows that you understand what authorities have said about the topic; you will then build on that to develop your own thoughts and analysis. In order to use evidence to a level expected of a graduate program, you are required to synthesize material from various perspectives and integrate this into your paper as you discuss your own original and creative position.

There is no definitive answer about how many and what types of sources of evidence must be synthesized and integrated into your assignment. A general rule of thumb might be "ten references for ten pages." However, to determine if you are referring to adequate evidence, you should ask yourself the following questions:

- Have I supported each of the major points in my paper with relevant evidence or have I put forward only personal opinions that are not substantiated with evidence?
- Have I used a variety of sources that present different perspectives of the evidence to support my position?
- Have I used evidence that is current and relevant to the discussion? If a source is not current, then is it a "classic" source that is still referred to by authorities in the field?
- Have I used both sources included in the course and other sources that allow me to personalize the assignment?

Your instructor will consider these same questions to evaluate the adequacy of the evidence used to support your statements.

## Intellectual Honesty and Plagiarism

Students registered in an Athabasca University course are considered to be responsible scholars, and are therefore expected to adhere rigorously to the principles of intellectual honesty. Please read the university's Intellectual Ownership and Honesty policy related to this.

Plagiarism is a form of intellectual dishonesty in which another person's work is presented as one's own. Be certain that whenever you use a primary or secondary source in your assignments you cite and reference your source using APA format (see below). All direct quotes (quotations of any number of words from the original) and indirect quotes (paraphrased ideas) must be acknowledged appropriately. Failure to do so constitutes plagiarism, and as with any form of academic misconduct, it will be penalized. Penalties may take the form of rejection of the submitted work; expulsion from the examination, the course or the program; or legal action, depending on the specific nature of the infraction. For more information, read the university's Student Code of Conduct and Right to Appeal policy.

However, dutiful citation of quotes and paraphrased materials does not mean that you can write an essay assignment by stringing together a series of quotes. You should always try to summarize or describe someone else's ideas in your own words. When you present your own ideas or opinions in a paper, provide evidence or arguments to substantiate your position.

## Grade Scale

The following scale will be used in evaluating your conference participation and your written assignments:

Mark	Percentage	Characteristics
A+ A A-	95-100% 90-94% 85-89%	The student evidences a critical orientation to the material, incorporating an extensive knowledge base, reflection, discovery of tacit meanings, highly original thinking, and critical analysis and synthesis; consistent ability to integrate theory and practical experiences to the discussion.
B+ B B-	80-84% 75-79% 70-74%	The student evidences an interpretive orientation to the material, incorporating a sound knowledge base, identification of underlying principles or themes, examples of situations or experiences, original thinking, and some critical capacity and analytic ability; some ability to integrate theory and practical experience.
C+ C C-	66-69% 63-65% 60-62%	The student evidences a descriptive orientation to the material, incorporating a satisfactory knowledge base, some ability to analyze and evaluate critically, and some original thinking.



F	59-0%	The student evidences an unsatisfactory knowledge base, concrete problem-solving with limited critical evaluation, and negligible original thinking.
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d) Please identify who were the assessors: single teacher, multiple teachers, peers, self.  
**(Selection Criteria 4)**

There are multiple assessors for the diagnostic and formative assessment strategies. The course teacher provides responses to the student postings. These can be one to one responses and/or open responses that can be read by class members. Fellow students also provide feedback to their course colleagues as they respond to the postings, ask questions and provide evaluative comments. Finally, the students themselves are required to reflect on their own learning in order to participate fully in these assessment strategies making them evaluators of their own learning.

For the summative evaluation assignments the primary assessor is the course instructor with the possibility of a second opinion for a colleague. Students can appeal their grades on these assessments and in these cases the second grader is another instructor who is blinded to the original grade.

e) Please describe what type of skills and competences were intended to be assessed by each method/practice **(Selection Criteria 5)**

The formative and diagnostic assessment strategies are intended to evaluate knowledge related to key course content (theory and concepts related to organizational change) but also they are intended to assess higher order cognitive skills such critical thinking, evaluation, analysis, and judgment. For example, engaging in debate (even a one minute self-debate) requires knowledge of the content but also the ability to create a logical and rational argument.

These assessment strategies also assess group and interpersonal skills as students often participate in group discussion and dialogue as part of the activities. Finally, these e-assessment strategies allow instructors, peers and students themselves insight into their affective domain accomplishments as they often share personal insights, opinions and attitudes through what they say in their postings. The photovoice activity is particularly effective in eliciting altitudinal insights and in providing students a venue to share these in a safe classroom environment where they can learn from the attitudes of self and others and where instructors and fellow students can help guide attitude development.

The summative strategies evaluate knowledge related to course content and writing skills.

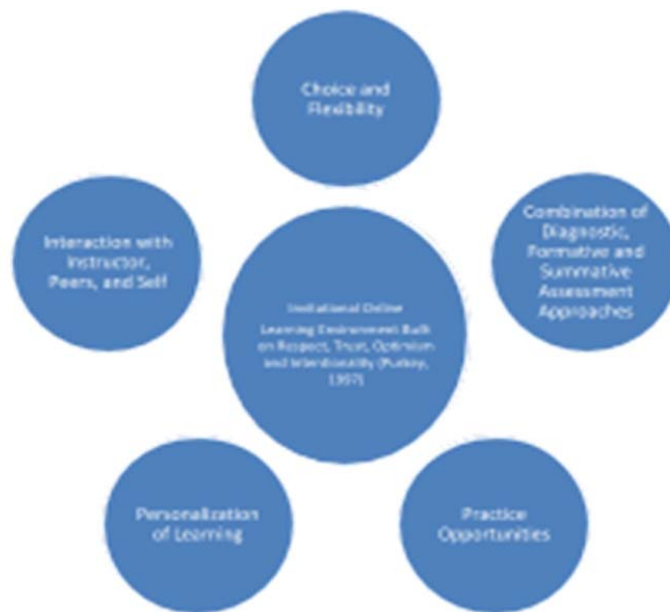
f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement **(Selection Criteria 6)**

It depends how you define real achievement – in our view they all evaluate real achievement.

However, in terms of quantifiable measurement of achievement the summative strategies provide a grade.

g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (**Selection Criteria 7**).

This course was created based on the invitational theory (Purkey, 1997) and fundamental design principles congruent with this approach. Utilizing a variety of e-assessment strategies (formative, diagnostic, and summative) that are rooted in respect, trust, optimism and intentionality helped create an engaging online learning experience. Learners were challenged academically and creatively and achieved learning outcomes from cognitive and affective domains. We believe that to be successful there needs to be a strong link between teaching practices and assessment strategies with the learner as the center of the processes. This alignment is depicted in the figure below.



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## **Course: Cardiology**

### **Learning Outcomes**

Learning outcome	E-assessment method
LO1: Knowledge about cardiology specificities in Sports Medicine	- Multiple-choice quiz for final assessment - Submission of a short essay when class is missed based on recorded video from the class.
LO2: Electrocardiography Module: analyze and interpret normal and abnormal ECG patterns frequently found in athletes	Formative assessment based in Multiple-choice quiz for classification of a large number of ECGs.
LO3: Auscultation Module: analyze cardiac sounds using a virtual model that provides training for the correct identification of thoracic locations for auscultation. (It uses realistic sounds, including noise and breath).	Formative assessment based in multiple-choice and correspondence questions correct identification of thoracic locations for auscultation.

### **Content**

Cardiology aims to develop clinical skills in diagnosis and treatment of heart disease more prevalent in the sporting population. Thus, the topics covered will be: Electrocardiography - general principles and criteria, the ECG and normal variants more common in young athletes - common standards (benign) and unusual (abnormal); interpretation of electrocardiograms; genetic testing in cardiology, imaging, syncope; echo in sports medicine, genetics and cardiovascular disease, the importance of medical advice; sudden death during sports, exercise tests and Holter; contraindications for sports.

### **Teaching**

Blended learning approach with lectures and a few sessions in flipped classroom format.

The course is provided both in face-to-face and remote mode (students may attend through a videoconference system).

### **Evaluation**

- multiple-choice quizzes performed online during a fixed period.
- Short essays.
- Formative assessment performed in Electrocardiography and Auscultation modules.



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### **TALOE specific information**

- a) Identify what was the purpose of the assessment: *summative and formative*
- b) For each assessment practice identified in 5. please describe what was the learning outcome (from 2.) that was intended to be assessed: *In LO1 the short essays delivered when classes are missed are relevant only for frequency assessment, multiple choice quizzes are used to assess summative classification. LO2 : analyze and interpret normal and abnormal ECG patterns frequently found in athletes ; LO3: analyze cardiac sounds using a virtual model that provides training for the correct identification of thoracic locations for auscultation*
- c) Please identify and describe what were the criteria used to mark the results of each e-assessment practice: *Assessment based in the: "Electrocardiographic interpretation in athletes: the 'Seattle Criteria'" and "Cardiac auscultation in sports medicine: strategies to improve clinical care" (references can be provided if necessary).*
- d) Please identify who were the assessors: *Multiple teachers that contribute to questions bank used in quizzes.*
- e) Please describe what type of skills and competences were intended to be assessed by each method/practice. *LO2 : analyze and interpret normal and abnormal ECG patterns frequently found in athletes ; LO3: analyze cardiac sounds using a virtual model that provides training for the correct identification of thoracic locations for auscultation*
- f) Starting from each learning outcome identified in 2., please identify which e-assessment methods/practices were used to evaluate the real achievement: *The final quiz.*
- g) Please describe how the learning outcomes identified in 2., the teaching practices described in 4. and the e-assessment strategies described in 5. are connected and promote the autonomy of the learner (Selection Criteria 7). *The modules are available for training, which along with the flipped classroom sessions, promote students autonomy. Classes are recorded and made available which enable easy reviewing of contents. The remote access further enhances student attendance.*

