GUIDELINES FOR ADAPTED KNOWLEDGE ASSESSMENT IN TIMES OF COVID-19 EPIDEMIC

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INTRODUCTION

Guidelines for adapted knowledge assessment in times of COVID-19 epidemic are addressing teachers who are implementing subjects in the academic year 2019/2020 and who have to adapt the knowledge assessment of their subjects due to the COVID-19 epidemic.

Guidelines take into account the recommendations of the National agency of the Republic of Slovenia for quality in higher education (NAKVIS), decisions of the University of Primorska senate, recommendations of the task force of the Slovenian Rectors Conference and experiences with past assessments.

CURRENT USE OF TOOLS

All UP faculties use LMS Moodle in study process. It is installed in joint server and each members has its own installation. With some minor specifics, all members use same configurations and control (safety copies, archiving of e-classrooms). To assure this a document with minimal standards for the use of e-classrooms has been prepared.

All submitted assignments (Moodle) and final works are checked for similarities with existing sources. UP is using single LDAP and separate synchronisations of identities in the MS cloud.

Each UP members uses its own (slightly adapted) version of the student information system VIS (Talpas).

UP teachers currently use especially: *E-classroom (Moodle), Zoom, MS Teams, Skype, Webex* and *Jitsy* (own server with limited capacity).

ADAPTED KNOWLEDGE ASSESSMENT

In line with the *Act Determining the Intervention Measures to Contain the COVID-19 Epidemic and Mitigate its Consequences for Citizens and the Economy*, universities can make changes to the obligatory parts of study programmes for the academic year 2019/2020. This includes changes of knowledge assessments for specific subjects. All changes have to be confirmed by the senate of the faculty, the university senate and sent to NAKVIS beforehand.

This assures autonomy of the higher education teachers, who can adapt knowledge assessment to current conditions and specifics of their subjects.

Means of knowledge assessments defined in the syllabus of specific subjects and which are usually implemented, serve as a basis for finding their adaptations for distance learning. Potential changes of the means of assessment have to enable relevant verification of achieved learning outcomes and competences defined in subject syllabus.

All teachers prepare their suggestions for the adapted knowledge assessment.

> Changing only the way an assessment is done (e.g. implementing written exam or mid-term in e-form, instead in classroom) does not constitute a change of the knowledge assessment mean.

SPECIAL CIRCUMSTANCES

When planning the knowledge assessment, teachers have to take into account the following special circumstances:
- If knowledge assessment will be possible at the university premises, relevant adjustments of the classrooms will be needed. Limitations on the maximum number of people might be in effect, when an assessment takes place. This might mean that multiple rooms simultaneously will have to be used, or assessments will be implemented in multiple time slots.
- Approximately half of foreign students returned to their countries of origin at the start of the epidemic. It is not feasible that they will be able to return to Slovenia for the assessment.
- All adaptations and changes apply only for the academic year 2019/2020, i.e. until 30 September 2020.

POSSIBLE DISTANCE KNOWLEDGE ASSESSMENT

WRITTEN ASSIGNMENTS

Teachers can mark the student based on their written assignments (paperwork, project work, homework, shorter written assignments, etc.).

KNOWLEDGE ASSESSMENT IN E-CLASSROOM

Besides written assignments, teachers and colleagues can also use the tools of the e-classroom, such as quizzes. Quiz settings enable randomness of questions, which means that a teacher prepares, for example, 100 questions, while the learning environment shows 20 of them to a specific student. This decreases the chance of students' distribution the questions among themselves. Teachers can also use random order of questions. Another useful setting is imposing time limit for each question.

ORAL KNOWLEDGE ASSESSMENT

Oral assessment is possible through videoconferencing systems.

WRITTEN KNOWLEDGE ASSESSMENT

Distance group written assessment are applied exceptionally and only if the teacher knows very well the e-environment and it options for safe implementation of written knowledge assessment. Teachers have to bring students' attention to the Rules on disciplinary responsibility of students or its regulations related to the knowledge assessment and assure proper monitoring and control of the knowledge assessment.

To assure proper control, groups of students should not be too big. This still enables proportionally efficient monitoring of the knowledge assessment. Groups should not be bigger than 25 students.

Overseeing the written knowledge assessment

To assure as credible knowledge assessment, as possible, some most common forms of cheating should be preventing, while the students should still have equal opportunities.

Possible solution is image capture during the assessment. Most reliable is capturing videos of students, as this assures the greatest possible credibility. To decrease the system load, teachers can also capture photos every few seconds, which also decreases the assessment credibility, as some cheating can be unnoticed.

Another possible solution is capturing the student's screen, which is preventing the use of other tabs and windows. As before, the system load can be decreased by capturing photos every few seconds, instead of filming the video.

To increase the credibility, majority of systems add additional solutions. For example, capturing the whole room also monitors student hand movement, which prevents their use of additional materials, or freezing other devices, such as pads and mobility phones, which could be used as additional sources during an exam. The most credible system uses a combination of mentioned approaches.

Teachers can also use existing videoconference systems. In their use, they should recreate the classroom environment to the largest possible extent. Students perform the test by writing their answers on sheets of paper on an empty desk and record themselves while doing it.

Students prepare the desk as showed in the pictures below. The camera is on the side and films the whole work area and the body above the desk, including the hands and head.

The footage has to show all sheets of paper, student ID and upper body with hands at all times. Headphones are not permitted. All other objects have to removed from the desk. Camera and microphone have to be turned on during the whole assessment period. Only communication with the people overseeing the test is allowed.
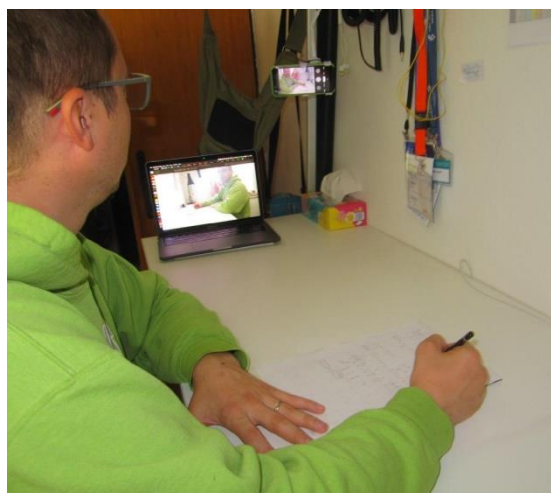
Students receive their answers in e-classroom. They have a limited amount of time available to print them out or write them down on an empty sheet of paper. Then they prepare the desk as shown in the pictures above and wait for the assessment to start.

During an assessment, an overseer can ask a specific student to show one of the sheets of paper, student ID or face at any time. If the student does not understand something, he can ask for additional clarifications over the microphone.

Once the assignments have been concluded, the student has to photo them and upload them to an e-classroom in a limited amount of time.

INFORMING STUDENTS

Faculties publish the information on adapted knowledge assessment for their subjects on their websites. Teachers publish the information on adapted knowledge assessment in the subject classrooms as soon as possible and not later that 14 days after the changes have been made.

IDENTIFICATION

Teachers have to take care of proper authentication and student identification. Depending on the the system used, partial authentication is done by students' login into the learning environment, where they use the identity received when they enrolled into the faculty.

The second stage of identification is done right before the start of the exam. **An individual student shows their student ID in front of the camera, or another personal document. The teachers checks the ID and confirms the student identity.** If a student uses another document than student ID, he covers all the fields which are not written on the student ID (in Slovene personal ID he would cover a personal number, date of birth, signature, gender, nationality and validity; all that would remain being seen are name, surname and photograph).

RECORDING THE ACTIVITY

During the assessment, teachers can record student activity (including recording film). **All students have to be notified about that before hand and agree with it. If a specific student does not agree, he is not allowed to take part in the written assessment and is not marked.** The footage is saved until the end of the complaint period, or if the complaint is raised, until the issue is resolved.

SAFETY OF CONNECTION AND DATA

Systems for distance knowledge assessment transfer critical safety information, for which an encryption has to be used to prevent any kind of misuse. Teachers have to assure safe transfer of questions in a way that "external observers" cannot access them, and safe transfer of answers, so that the "external observers" cannot change the answers. This can be achieved with safe communication between the server and the client. This is the only way that assures the integrity of answers, which is the basis for the fair assessment.

Apart from the connection, safe saving of the data in databases has to be assured as well. Only authorised people can access and view the data. Generally, no one should have the right to change the data.

> As a rule, document transfer for written exams is done through e-classroom.

PERSONAL DATA PROTECTION

Teachers have to assure personal data protection.

Used software tools have to comply with GDPR, where it is especially important that the data is being stored in the territory of the EU. E-classroom, ZOOM, VOX, MS Teams, SKYPE, WEBEX and JITSI satisfy the GDPR conditions.

Saving personal data is allowed only with prior consent of the student and only until the end of the complaint period, or if a complaint is raised, until the issue is resolved.

It is prohibited to store personal documents (personal ID, passport) in any form. Therefore, the identity check should be done with student ID. If the students will use other documents, they should cover all the data that is not listed on student ID. The teacher can view the personal ID over the camera, but is not allowed to store it (capture the photo or store its record).

SPECIAL CIRCUMSTANCES OF STUDENTS

If students do not have the relevant equipment (computer of phone with camera) or cannot fulfil other relevant conditions (e.g. stable internet connection, private room, etc.), and they would still like to take part in the knowledge assessment, they should contact their faculty as soon as possible. This will be considered as an exceptional case and the student has to announce it at least three days before the written knowledge assessment.

The faculty (student office) in agreement with the teacher and the students finds an appropriate solution, which can include:
- Free equipment rental,
- Performing the knowledge assessment at the faculty premises under the same conditions (e.g. knowledge assessment in a computer classroom),
- Alternative knowledge assessment at another time (e.g. oral exam using the screen share, camera and conversation).

Systems 1

Organization of midterms

Due to the Covid-19 lockdown, midterm exam for the Systems 1 course will be carried out remotely through Zoom. Attendance is optional.

- It is required to apply for the midterm exam by the test submission in e-classroom.
- You will get the exact link to your group later (max 25 students per group).
- The midterm exam will be recorded.
- The midterm exam lasts for 90 minutes.

In order to attend the midterm, the student must arrange the following writing conditions:

- A room with a desk. During the exam, no other person must be present in the room.
- A computer/smartphone with internet connectivity, camera and a microphone:
  - If you are worried that your computer might crash during the midterm exam, use two cameras (one on your smartphone and one on your laptop or desktop computer)
  - If you have a poor internet connection, try mobile internet (via smartphone or mobile modem).
  - All used devices should be plugged in!
- A high resolution camera to make readable photos of solutions. Smartphone camera may suffice.
- 5 empty sheets of paper A4 (with lines or without, from a notebook, exercise book …) and two pens (if one stops working).
- Student ID card or some other ID document with a photo.
  - When using some other ID, cover the fields not present on the student ID (for the Slovene ID you may cover the personal number, date of birth, signature, gender, citizenship and validity; all that remains visible are the photo, first name and surname).

Prepare your desk as shown in pictures below with the camera on the side so that entire desktop including your upper part of the body including the hands and the head are visible. Headphones are not allowed. Remove all other unnecessary items except for papers and pens.

The exam will be carried out in the following steps:

1. Students log in to their designated Zoom room and remain logged until the exam finishes. Camera and microphone must be turned on at all times. Make sure there are no background noises. No communication is allowed except with people overlooking the exam. The person who overlooks the exam will ask you via the Chat to confirm that you agree to the recording. If you do not agree, your exam will be considered void. The person who overlooks the exam will then verify the presence of students, and if necessary, their identity and contents of the papers on students' desks.

2. When the exam questions become available in the e-classroom, students are allowed 15 minutes to either print out the questions or copy them by hand on an empty sheet of paper. Double check if the text you have copied is the same as the text provided in the e-classroom! All the needed information will be given with exam questions. When the questions are copied the computer should be moved on the side as described before and the student must wait in front of the camera until the 15 minute preparation period is over.

3. The exams begins. Double check that all sheets of paper, the student's ID, the upper body and the head are clearly visible and must stay visible all the time. Calculators will not be needed nor allowed. Looking at the computer screen or mobile device is not allowed. The student may

at any time be asked to present a sheet of paper or the ID card in front of the camera for a closer inspection, or to briefly look at the camera for recognition. If you do not understand something, you can ask via microphone. You will receive an answer as soon as possible. In the meantime, you can solve other exam questions.

4. When done or when 90 minutes are over, the student has to notify the person overlooking the exam who is going to take a timestamp od the beginning of the submission. When students are allowed to, they have 15 minutes to take photos of the solutions and submit them. Each photo must contain one page of solutions with the ID card at a top corner (or other personal document). Photos must be arranged in the order of the exam questions, e.g. `1.jpg`, `2.jpg`, etc. If the camera names photos so they are already ordered (e.g. by sequence number, date and time ...), the photos do not need to be renamed. Students than need to zip the files and upload the zip file to the e-classroom. Files can also be uploaded individually. When students manage to submit the file to the e-classroom they must again notify the person overlooking the exam who will take another timestamp of the end of submission. Only then students are allowed to leave the Zoom room.

Try submitting a test submission in the e-classroom beforehand so that you have a sense of how to do it and how long it takes (take pictures of any papers, ZIP the files and submit them).

Any form of violation (copying, communication, use of unauthorized items, excessive head turning, use of a computer or smartphone while copying exam questions, etc.) will be punished as by the university's by-laws. If the person overlooking the exam suspect that students are violating the rules during the exam they are required to provide a way to fully inspect their environment and objects where they write the exam via a video camera. If students do not cooperate and/or a violation is found their exam will be considered void.

If a high possibility of cheating is either found during the exam or after and it could or cannot be directly proven, all such students will be called to an additional defense.

If a student is not able to establish the above conditions and still wants to take the midterm exam, an oral exam may be arranged at a later time. This is considered a special case and the student must justify his/her position at least 3 days before the day of the written exam. Such examination will be done through screen sharing, camera and conversation. The identity of the student will have to be confirmed on camera.

The theoretical part would be examined by prof. Matjaž Kljun, and practical part by asist. Elham Motamedi (eng) or asist. Domen Šoberl (slo).

FREQUENTLY ASKED QUESTIONS:

Q: May I attend the midterm exam?
A: If you submitted your 1st homework and received a grade (0-100), yes.

Q: How do I sign up for the midterm exam?
A: Make a test submission.

Q: What are my options if I don't pass the midterm?
A: Collect 50% in total on homeworks and pass the final exam.

Q: Will the midterm exam in the Zoom be filmed?
A: Yes, but the video will not be published anywhere. The midterm exam will be filmend for later violations checking. After two weeks or solving up all the issues the videos will be permanently deleted.

Q: Can I print out the questions or must I hand-copy them?
A: You can use a printer and print the questions.

Q: Do I need to have a printer in the same room where I'm writing the midterm exam?
A: You can start the print job and wait at the desk for it to finish. Once printed, you can go for a half-minute to fetch the print-outs. If you will be absent more time, we will consider this as a violation.

Q: What should I do if I cannot submit the test submission?
A: Please try again. Take some photos with the device that you will use to take photos for the midterm exam. Take at least 5 such photos. Zip them and make sure the file is not too big to submit. There is a file size upload limit. So test the submission beforehand!

Q: What if the ZIP file is too big and the server rejects it?
A: Change the resolution of the photos but in a way that it will still be possible to read from. Test the whole submission beforehand!

Q: What if the ZIP file big and I have poor internet connection?
A: Change the resolution of the photos but in a way that it will still be possible to read from. Test the whole submission beforehand!

Q: How do we submit the exam?
A: Read the instructions published on e-classroom.

Q: Can I submit a PDF?
A: Yes. But be aware that preparing a PDF might take additional time. Test this preparation beforehand!

Q: Can I submit in another format?
A: No. You can submit either a Zip file with all photos or a PDF.

Q: I don't have a camera other than the one on the phone. Can I use the same phone for a Zoom meeting and for taking Photos of the exam?
A: Unfortunatelly no. Read the next question for a solution.

Q: What if I want to submit over the same phone on which I took photos?
A: One camera needs to be on all the time. If you don't have a webcam you can borrow another smartphone from parents, siblings, neihghbours ... and use it as a webcam (http://www.skipser.com/p/2/p/android-as-webcam.html). Or you simply have two phones - one for the camera and one for the submission. Test the whole setup beforehand and try submitting the Zip file to make sure everything will work.

Q: Can I have a desk with a window in front of it?
A: The window may be in front of you. However, based on the required camera position, the picture might be to bright to see anything. Test beforehand. If you often look at the window, the wall, the turned-off computer screen ... or whatever is in front of you, it will be considered a violation.

Q: Can I have a computer screen turned off in front of me?
A: If you have a large screen that is not easy to move, you can have it turned off in front of you. If you are also hand-copying or printing questions from the same screen, you can have it on while doing so. When you finish hand-copying/printing, turn the screen off. During this time, the camera should show your desktop, your body from the desktop up and the front side of the screen.

Q: What if I make a mistake when hand-copying the questions?
A: Check twice if you have copied the questions correctly.

Q: What if I finish early and want to submit my answers?
A: You can submit the answers up to 15 minutes before the end of the exam. When done, you must notify the person who oversees the exam over the microphone. From the moment this person acknowledges you, you have 15 minutes to submit the answers. If you delay the submission for more than 15 minutes, it will be considered a violation. If you finish in the last 15 minutes, put the pen down and wait until the end.

Q: What name do I use to sign in to Zoom?
A: Sign in to Zoom with your first and last name. Do not use nicknames.

Q: What if my desk is transparent (glass)?
A: If possible, lay over an opaque cloak. If that is not an option, you may write on the glass surface, but there must be nothing on the floor!!! If you have glass on a (wooden) table, there should be no papers underneath. If you keep looking repeatedly at the table on the left and right side from the papers you are writing on, will this be considered a violation.

Q: What if others will bother me as they loudly ask questions?
A: All questions must be asked orally. The use of instant messaging programs is prohibited. If you are disturbed by sound, put your speaker's volume to a minimum level, so that the person who oversees the exam can call you. If you will not answer the call from the person who oversees the exam, we wil consider this a violation. If a student should repeatedly disturb others without a reason, he/she will be removed and his/her exam will be graded negatively.

Q: It would help if you were there before the exam starts, so we could ask urgent questions.
A: Those who oversee the exam will arrive to the Zoom room 15 minutes early to check everything and point out any inconsistencies with the rules, placement of cameras, etc. There will also be a chat room available in e-classroom (Moodle) if you'll have problems connecting to Zoom.

Q: Can we have questions in Slovene and English on the same paper?
A: Exam will be available in Slovene and English separately. You may use any of them and write your answers in any language.

Q: May I mix English terms in Slovene text?
A: You may.

Q: What if my internet connection drops?
A: You can have extra WiFi available over your phone as a hotspot. If your WiFi connection drops, connect your computer to your phone's WiFi. If you use the camera on your phone to stream your

desktop and your home WiFi connection drops, your phone will automatically connect to mobile data. Each such interruption can take up to a few seconds. If you repeatedly disappear from the Zoom Room, this will be considered a violation. If too many people do this, we will stop the midterm exam for all. All the exams will not be graded.

Q: How many times will you warn us for violations?
A: Depending on the violation. If the violations are not severe, we will warn you up to 2 times, the third time you must finish writing. If the violation is serious, you will stop writing immediately. In both cases, the midterm exam will be graded with a negative mark.

Q: Can I have a pencil sharpener and rubber on the desk?
A: Yes. But you need to take into account that the pencil might not be visible enough. Test it beforehand. Otherwise have at least two pens if one might stop working.

Q: Can I have a glass of water on the desk?
A: Yes. The glass or plastic bottle need to be trasparent without labels on.

Q: Can I go to the toilet?
A: Yes. You are allowed two minutes. You need to tell the person who overlooks the exam and you need to leave everything on the desk.