



**UTeM**  
ONLINE TEACHING AND LEARNING AND ASSESSMENT GUIDELINES

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# Introduction

The guidelines of Online Learning and Online Assessments is designed to prepare UTeM in dealing with any contingency which requires all the academic activity need to be delivered partially or fully online. The guideline is designed to help UTeM and all the staff to understand the standard operating procedures need to be taken while conducting the learning, teaching and assessment online. This guideline can be used as a document to plan, implement, and gather evidence for any future references of any contingency arises.

## About the Guideline

The guideline consists **THREE (3)** sections:

- A. Online Teaching and Learning Design;**
- B. Online Teaching and Learning Delivery; and**
- C. Online Teaching and Learning Assessment.**

Each section also addresses the quality assurance of the online T&L and assessment. For the purpose of this guideline, online teaching and learning refers to the teaching and learning activities that take place in an internet-connected environment and/or using e-learning platforms.

This guideline needs to be read together with:

- i. Garis Panduan ePembelajaran UTeM 2016
- ii. Any updated eLearning Guidelines regarding the implementation of Teaching and Learning and Assessment Delivery.
- iii. Any Respective Professional Bodies Updated Requirements; and
- iv. All other relevant policies, procedures and circulars issued during the contingency by UTeM management as well as the Government of Malaysia.

# **A.ONLINE TEACHING AND LEARNING DESIGN**

## **1. Online Teaching and Learning Design and Assessment**

All courses need to be designed and implemented based on the principles of student-centered learning that encourage students to actively participate in the learning activities. Academic members should consider applying either or both synchronous and asynchronous interactions with the students. Academic members also encourage to embed gamification, game-based learning and any instructional design to make sure the learning process are engaging and more effective based on each course CLO.

Online teaching and learning should also involve collaborative learning, problem-based learning, and other suitable teaching and learning strategies. The design and delivery of the online T&L must support and be constructively aligned with the predetermined Course Learning Outcomes (CLO). No changes are allowed to the approved CLOs of the course. The alignment between CLO, online teaching strategies and assessment should be updated and recorded for quality assurance and accreditation purposes.

All online T&L implementations must put into consideration of students' ability to access the teaching and learning materials wherever they are. Academic members need to consider applying low-tech teaching strategies for students with limited internet access, for instance, using soft copy or print-based materials, and WhatsApp/Telegram or any similar communication channel. The online T&L activities should use ULearn as the university's official learning management system (LMS). Any external tools used need to capture or linked to ULearn for easier monitoring.

However, Academic members are also free to use other Web 2.0 tools available online in designing and delivering learning for the students. T&L may also occur outside of ULearn, for instance, using external applications such as Kahoot, Quizziz, Socrative, Loom, Facebook, etc. But each activity need to be recorded in ULearn as an external link or screen shot to provide as evidence that the T&L is being conducted properly. This is to ensure that students have a one-stop-centre to access all the learning materials.

For courses that rely heavily on face-to-face interactions such as community engagement, workshop, courses that involve practical elements such as laboratories, studio, service-learning, work-based learning etc, the respective faculties, centres, institute and Academic members are encouraged to be creative and explore various instructional design strategies such as online demonstrations, simulations and video or audio-based, and alternative assessment methods.

Academic members are required to ensure that the number and complexity of tasks given commensurate with the course credit load and student learning time. Academic members can plan to conduct online assessments with small groups of students to avoid congestion.

If this approach in small groups is implemented, Academic members must ensure that the assessments carried out are fair and equal across all groups.

All changes to the design and delivery of the courses should be documented in an updated.  
\*Course Information for Current Semester/Term form (OBE System and ISO Course File) for quality assurance of the revised T&L mode or other equivalent documents.

## **B. ONLINE LEARNING DELIVERY (PSTP)**

### **1. Online Learning Delivery**

Moving conventional teaching and learning practice into an online delivery must be done taking into consideration both the opportunities and drawbacks of the online medium. Academic members are encouraged to consider including students in designing the best delivery methods to ensure effective, engaging and meaningful learning experience for them.

- i. Pusat Sumber dan Teknologi Pengajaran (PSTP) has compiled numerous resources in the form of infographics, references and URL links to help academicians design an execute online learning delivery and this is available in <http://pstp.utem.edu.my/eLearning>.
- ii. Academic members are also required to always refer to any Circular and policies which relevant to that particular requirement. For example, the Contingency Plan for Covid-19.
- iii. It is important for the Academic members to inform the students about the scheduling of activities before hand to ensure an efficient teaching and learning delivery. This can be done by updating the courses announcement in ULearn for each courses and disseminate it to all students. Students should be informed about:
  - a) teaching and learning activities that will be done and important dates to be followed;
  - b) types of assessment and detailed weightage for each assessment; and
  - c) duration and scheduling of synchronous or asynchronous type of assessment.
- iv. Delivery of instruction can be done in two ways: synchronous or asynchronous learning interactions. PSTP recommended that asynchronous learning interaction to be the main choice due to some consideration such as the lack of adequate internet bandwidth.
- v. Academic members are encouraged to host only a few synchronous learning sessions throughout the semesters;
- vi. For each of the online lecture/lab session must consist of:
  - a) Session Learning Outcome
  - b) Proper instruction and effective content curation and creation

- c) Contained learning resources – in various forms e.g. online (live) lectures, pre-recorded presentations, YouTube videos, links to webpages related to topic of learning, etc.
  - d) Learners' activities – minimum of 1 activity per topic; (for formative and attendance).
- vii. Any changes must be documented for accreditation and ISO purposes.

## 2. Synchronous Teaching and Learning

**Synchronous online learning** involves learning in real-time (*both parties have to be online simultaneously*) such as chat, teleconferencing, videoconferencing, live-streaming Academic members and virtual classroom. This type of learning allows students to obtain immediate feedback from fellow students and instructors during the course. Strategies may include:

- Conduct live online lectures; and/or
- Invite guest speaker(s) to the online session.

Tools that can be use in synchronous teaching and learning such as YouTube Live Stream, Facebook Live video, Skype for Business, Webex, Zoom or other web conferencing tools. Get the students to actively participate in the session by encouraging them to:

- Write ideas, comments, sharing resources using the chat box;
- Sharing ideas and comments verbally; and/or
- Present their works to everyone in class using the screen sharing feature.

## 3. Asynchronous Teaching and Learning

**Asynchronous online learning** allows learning to happen at students' own pace without real-time interaction (remote learning) with Academic members. Therefore, Academic members can provide materials for reading, lectures for viewing or listening (video and podcast), assignments for completing, and examinations for assessment, and students will have the ability to access and satisfy these requirements within a flexible time frame given by the Academic members. Methods of asynchronous online learning include self-guided lesson modules, pre-recorded video content, virtual libraries, posted lecture notes, and exchanges across discussion boards or social media platform. Strategies may include:

- Pre-recorded lectures, tutorials, or labs sessions.
- Screencasting i.e. video recording of your computer screens; and/or
- Slidecasting i.e. audio podcasts that are combined with slideshow.
- Storytelling presentation
- Interactive Content.i.e. Simulation, VR, Augmented Reality and Mix Reality
- Link to media social and web
- Student Activities tools, i.e.Forum, Feedback, discussion

Tools: Various tools are available such as Microsoft PowerPoint, Loom screen recorder, Screencast-O-Matic, Adobe Captivate, Camtasia Studio, and Explain Everything.

UTeM Academic members are allowed to choose either to use synchronous or asynchronous mode for T&L and online assessment but out of this two, academic members are recommended to use asynchronous mode due to students' constraints. Not all students have stable internet connections and with asynchronous mode, students can access the content at anytime and anywhere.



## **C. ONLINE ASSESSMENT AND STUDENT LEARNING TIME (SLT) (BPA and PPA)**

### **1. The Principles of Online Assessment**

Any emergency and contingency situation such as during lock downs and movement control orders to face COVID-19 pandemic has lead all day to day activities and task to be changed. Education is no exception. UTeM has made an option to resort to partial/full-time online teaching and learning to survive during this period of time. of. Faculty members are encouraged to think creatively in delivering the teaching and learning to run courses for their students. As with face-to-face teaching and learning, the issue of assessment become a challenge to faculty members when they are designing their online courses. This guideline discusses the main principles of online assessment to help academic members designing assessment.

#### **1.1 Addressing accessibility issues**

In the situation where students are dispersed throughout multiple localities with differing quality of IT infrastructure, the issues of availability and stability of the internet connection and suitable equipment should be the priority. **Asynchronous assessment** methods or tools which do not require real-time interactions should therefore be given priority when required.

#### **1.2 Alignment of assessment activities with the learning outcomes**

Constructive alignment is important in online assessment as in face-to-face assessment and therefore have to ensure that the assessment tools and activities match the learning outcomes.

#### **1.3 Creating authentic assessment tasks**

Authentic assessment tasks are considered as a more holistic assessment of student abilities. It is characterized by assessment tasks that are set in real-life contexts, cuts across multiple competencies and has multiple solutions.

#### **1.4 Avoid assessment of irrelevant skills**

Certain skills not directly related to any learning objectives, like keyboard typing skills and familiarity with a specific online assessment tool which might become disadvantage to certain students, especially in timed assessments. Unless the course needs to specifically intends to assess such skills in the assessment, be aware of this when designing any task/assessment.

#### **1.5 Planning assessment according to student learning time (SLT)**

Planning assessment according to SLT to ensures that students are well prepared for the online assessment and the assessment load is appropriate. Academicians are required to ensure that the number and complexity of tasks given

commensurate with the course credit load and student learning time. Academic members can plan to conduct online assessments with small groups of students to avoid congestion. If this approach in small groups is implemented, academic members must ensure that the assessments carried out are fair and equal across all groups.

#### **1.6 Communicating with students regarding assessment matters**

Communication regarding assessment needs to be clear and transparent similar to face to face assessment. Students must be informed using either text, audio or video regarding how the assessment relates to the learning objectives, the methods and criteria used (including rubrics and rating instruments) and when and how they can access their assessment results. This communication channel also must be recorded for accreditation and ISO purposes.

#### **1.7 Employing multiple assessment methods**

Do not rely on a single assessment tool for all learning outcomes. Multiple types of online assessment methods and tools can be used to support a more accurate assessment and is better able to assess the breadth and depth of student knowledge.

#### **1.8 Continuous reflections**

Individual educators are encouraged to use data obtained from online formative assessment tasks to reflect on teaching and assessment practices. It can be obtained from any platform chosen such as ULearn.

#### **1.9 Timely feedback**

The most critical element of online assessment is the provision of frequent, timely, sufficiently detailed and constructive feedback. This kind of feedback is necessary to make online assessment tasks successfully influence the learning.

#### **1.10 Provide a well-spaced-out assessment schedule**

Assessments should be well spaced out across the course of educators, taking into consideration the time students are reasonably expected to complete the assessment task and external factors such as important events in the calendar.

## 2. Synchronous and Asynchronous Assessments

The online learning assessment are usually divided into two categories synchronous and asynchronous.

### 2.1 Synchronous assessment

**Synchronous assessment** involves assessment in real-time requiring both examiners and students to be online simultaneously, for instance online viva, online final year project presentation and real-time multiple choices type of questions. This can be done using apps such as Kahoot , ULearn Quiz, or any relevant plug-in apps.

### 2.2 Asynchronous assessment

**Asynchronous assessment** involves assessment at students' own pace without real-time interaction with examiners, for instance online essay, online quizzes, online lab test, midterm examination, assignments and e-portfolio.

## 3. Applying the domains of learning with technology

When adding technology into instruction and curriculum, there is a need to add a taxonomy to help how learning can happen using technology integration. Basically, there are three domains: **(i) Cognitive, (ii) Affective and (iii) Psychomotor.**

### i. Cognitive Domain

As for the cognitive domain in this context, Bloom's Digital Taxonomy (Churches, 2010) helps educators use technology and digital tools to facilitate student learning experiences and outcomes. Table 2.1 explains the levels and includes matching examples of technology integration for teaching and learning based on synchronous and asynchronous methods. However, the table is not comprehensive, more information can be accessed from Bloom's Digital Taxonomy 126 Power Verbs (Techthoughtstaff, 2017). Academic members must tie the use of each tool to specific learning outcome (LO) and allow students to familiarize themselves with the assessment methods.

Table 2.1: The cognitive learning outcomes and examples of assessment activities

Cognitive Learning Outcomes		
Cognitive Domain	Assessment activities	
	Synchronous	Asynchronous
<p><b>Lower Order Thinking Skills</b></p> <p><b>Remembering (C1) :</b> To recall or retrieve facts, basic concepts of previously learned information</p> <p><b>Understanding (C2):</b> To explain ideas, concepts, or construct meaning from written material or graphics</p> <p><b>Applying (C3):</b> To use information or concepts in new situations such as models, diagrams, or presentations</p>	<p>i. Standardized online quiz</p> <p>Platform/Apps: ULearn, Socrative, Quizlet, Quizizz, Kahoot!, Google Form</p> <p>ii. Group discussion, live video presentation (individual/ group)</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p> <p>iii. Online oral examination (viva voce and interview)</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. written assignment (e-poster, essay mind-mapping etc)</p> <p>Platform/Apps: ULearn, Google Form, Google Doc, Email, Blogs, Wiki, Padlet</p> <p>ii. project assignment, lab report, progress report, etc)</p> <p>Platform/Apps: ULearn, Yammer, Onedrive, YouTube, Google Doc, Trello, Padlet, Blogs, Evernote</p>

<p><b>Higher Order Thinking Skills Analyzing (C4):</b> To draw connections among ideas, concepts, or determining how each part interrelate to an overall structure or purpose</p>	<p>i. Presentation (case study, problem-based, task-based, project-based, etc)</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. Written assignment (scenario-based, critical appraisal, literature review, reflective journal, etc)</p> <p>Platform/Apps: ULearn, Google Form, Google Doc, Email, Blogs, Wiki, Padlet</p>
<p><b>Evaluating (C5):</b> Synchronous (real-time assessment)</p>	<p>ii. Group discussion, live video presentation (individual/ group)</p>	<p>ii. Project assignment (pre-recorded video, podcast, etc)</p>
<p><b>Creating (C6):</b> To produce new or original work; builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.</p>	<p>Platform/Apps: Microsoft Teams, Webex, Zoom</p> <p>iii. Online oral examination (viva voce and interview)</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>Platform/Apps: ULearn, Youtube, Google Doc, Padlet, Evernote, Explain Everything, etc.</p>

**ii. Affective Domain**

The affective domain includes how learners deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. Without face-to-face interaction, it is hard to observe students' reactions, behaviors, and expressions. In online learning, learning objectives related to the affective learning domain could become more challenging to formulate and measure than they are in traditional face-to-face learning. Not all affective learning objectives are measurable. Given the importance of developing positive affective learning outcomes in education, educator need to look for the most feasible optimal methods to measure them. Table 2.2 describes how the affective domain may be implemented in online learning.

Table 2.2: The affective learning outcomes and examples of assessment activities

Affective Learning Outcomes		
Affective Domain	Assessment activities	
	Synchronous	Asynchronous
<p><b>Lower Level of Commitment</b></p> <p><b>Receive Phenomena (A1):</b> The lowest level where students passively pay attention e.g. Awareness, willingness to hear, selected attention.</p> <p><b>Respond to phenomena (A2):</b> Active participation on the part of the learners. Attends and reacts to a particular phenomenon. Learning outcomes may emphasise compliance in responding, willingness to respond, or satisfaction in responding (motivation).</p>	<p>i. Online oral examination (viva voce and interview) Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. project assignment (lab report, progress report etc)</p> <p>Platform/Apps: ULearn, YouTube, Google Doc, Padlet, Explain Everything, etc)</p>

<p><b>Higher Level of Commitment</b></p> <p><b>Value (A3):</b> Assigns some value to an object, phenomenon or piece of information. This ranges from simple acceptance to the more complex state of commitment.</p> <p><b>Organize (A4):</b> Putting together different values, information, ideas; accommodating them with their own knowledge. Organises values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system. The emphasis is on comparing, relating, and synthesising values.</p> <p><b>Internalise values (characterisation) (A5):</b> Have a particular value or belief that now influences their behaviour and becomes a characteristic. The behaviour is pervasive, consistent, predictable, and most importantly, characteristic of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).</p>	<p>i. Presentation (case study, problem-based, task-based, project-based, etc)</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. Project assignment (pre-recorded video, podcast, etc)</p> <p>Platform/Apps: ULearn, Youtube, Google Doc, Padlet, Evernote, Explain Everything, etc.</p>
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*\*Notes: Affective domain assessment can be integrated in the cognitive-based assessment methods.*

**iii. Psychomotor Domain**

Practical skills play a vital role in many courses and the challenge is how to simulate these skills in online learning. For this purpose, Simpson's Psychomotor Domain (Table 2.3) is used as the taxonomy. The psychomotor domain focuses on performing sequences of motor activities to a specified level of accuracy, smoothness, rapidity, or force. Underlying the motor activity is cognitive understanding which can be linked to Blooms. The psychomotor domain is best assessed in a face-to-face situation however in some scenarios these can be accessed using virtual laboratories, end-product and portfolios.

Table 2.3: The psychomotor learning outcomes and examples of assessment activities

Psychomotor Learning Outcomes		
Psychomotor Domain	Assessment activities	
	Synchronous	Asynchronous
<p><b>Lower Degree of Coordination</b></p> <p><b>Perception (P1):</b> The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation</p> <p><b>Set (P2):</b> Readiness to act. Knows and acts process. The ability to perform specific actions by memory or following instructions.</p> <p><b>Guided response (P3):</b> The early stages of learning a complex skill that includes imitation and trial and error. Adequacy of performance is achieved by practicing.</p>	<p>i. Online oral examination (viva voce, interview, online progress presentation) – e.g., systematic, proficiency, using right tool, etc</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. project assignment (lab report, progress report etc)</p> <p>Platform/Apps: ULearn, YouTube, Google Doc, Padlet, Explain Everything, etc)</p>



<p><b>Higher Degree of Coordination</b></p> <p><b>Mechanism (P4):</b> This is the intermediate stage in learning a complex skill. The student should be able to execute the motor activity with some confidence.</p> <p><b>Complex response (P5):</b> At this level, the learner must be able to perform the psychomotor activity with a high degree of precision</p> <p><b>Adaptation (P6):</b> The learner must be able to modify the psychomotor activity for enhanced efficiency</p> <p><b>Origination (P7):</b> The learner would be able to come up with new movements to perform the motor activity. Learning outcomes emphasize creativity based upon highly developed skills</p>	<p>i. Presentation (case study, problem-based, task-based, project- based, etc) - communication skills, presentation skills, etc</p> <p>Platform/Apps: Microsoft Teams, Webex, Zoom</p>	<p>i. Project assignment (pre-recorded video, podcast, etc) eg- collaborative skills etc.</p> <p>Platform/Apps: ULearn, Youtube, Google Doc, Padlet, Evernote, Explain Everything, etc.</p>
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*\*Notes: Psychomotor domain assessment can be integrated in the cognitive-based assessment methods. In certain settings for examples lab-based and clinical-based, there are limitations to assess it through online methods. Guidelines for Student Learning Time (SLT)*

*Student learning time (SLT) is the amount of time students are actively, successfully, and productively engaged in learning relevant academic content. It is a broader term that encompasses not only the quantity of time spent on an academic task (i.e., learning time), but also related cognitive and emotional learner-centred variables such as self-motivation, initiative, and self-regulation. On-task behaviours a narrow term, most often associated with “paying attention.” Observable indices of on-task behaviour can include behaviours such as completing assignments, participating in discussions looking at the teacher, or listening to peers.*

## **4. Continuous Assessments (Formative assessment)**

For continuous assessments that were originally planned as physical, face-to-face implementation (e.g. in-class test, presentation, laboratory experiments, etc.), alternative online methods should be used. Alignment to respective CLO must be retained.

- a. Continuous assessments that were already planned as online assessments may proceed as scheduled. Keeping in mind that students will now have additional online alternative assessment workload (formative assessment), the Course Coordinator needs to ascertain the deadlines for assessments are well planned and not intensive towards the end of the semester.
- b. Academicians are required to ensure that the number and complexity of tasks given commensurate with the course credit load and student learning time. Academicians can plan to conduct online assessments with small groups of students to avoid congestion. If this approach in small groups is implemented, academicians must ensure that the assessments carried out are fair and equal across all groups.
- c. Academicians must prepare a marking scheme and/or rubric as a guide to ensure uniformity and/or consistency in the online continuous assessment. Unclear marking criteria will affect the reliability of the assessment and thus unfairness may occur.
- d. For the formative assessments, academicians should provide feedback on students' achievement within a reasonable period of time so that students can improve their performances in subsequent assessments, and in the course as a whole.

## **5. Guidelines for Student Learning Time (SLT) and Summative Assessment**

### **5.1 Student Learning Time (SLT)**

- a. Time that students spend for learning teaching activities, involving
  - i. Guided learning;
  - ii. Independent learning and;
  - iii. Assessment.
- b. SLT depends on course unit / credit
  - i. 1 Unit @ Credit: 40 Notional Hours
  - ii. Therefore: for 3 units /credits : 120 Hours

Table 1: Student learning Time (SLT) and Notional Hours

Units / Credits	Hours
2	80
3	120
4	160

## 5.2 SLT Guideline for Online Delivery Teaching & Learning

- a. Due to the Movement Control Order (MCO), there is a need to convert face-to-face activities into online activities. The University has set the Student Learning Time (SLT) method for teaching and evaluating online activities as a reference to all faculty. The estimated SLTs for online teaching activities are given in Table 2 while the estimated SLT for Continuous Assessment or Continuous Assessment (CA) are given in Table 3.
- b. Considering internet access problems among students living in their respective homes during the Movement Control Order, it is advisable for academic members to limit their synchronous online interaction sessions to maximum 40% of the original face-to-face SLT. To meet student SLTs, academic members are encouraged to provide students with asynchronous online reading materials.
- c. For courses that replace the Final Examination (FE) component with the CA component, the instructor should replace the SLT FE number with the CA SLT as follows:
  - 3 hours FE = 9-11 hours SLT CA
  - 2 hours FE = 6-9 hours SLT CA
  - 1 hour FE = 3-5 hours SLT CA

Table 2: SLT for Teaching and Learning Activity

Activity	SLT
<p><b>a) Synchronous (Real Time) based Online Teaching</b></p> <p><b>Examples:</b> Lectures, tutorials, discussions, group discussions, activities cooperation and presentation (the everything is done online Synchronously)</p>	<p>The duration of the meeting is similar to face to face</p> <p>Example: 60 minutes synchronous online lecture equal to 60 minutes face-to-face lecture.</p>

<b>Platform/Apps:</b> Microsoft Teams, Webex, Zoom etc.	
<b>b) Asynchronous (Non-Real Time) based Online Teaching</b>  <b>Examples:</b> Lecture Recoding, Informatic video, Lecture note/slide with audio podcast  <b>Platform/Apps:</b> uLearn, Google Form, Google Doc, Email, Blogs, Wiki, Padlet, YouTube	15%-20% of the implementation online SLT is equivalent to SLT face-to-face meetings. Examples: <ul style="list-style-type: none"> <li>• 10 minute pre-recorded video lecture is equal to 1 hour lecture face to face.</li> <li>• 10 slides with audio podcast is equal to 1 hour</li> </ul>
<b>c) Class Preparation/Revision</b>  <b>Examples:</b> Review of online lecture materials digital notes, URL link etc.	The SLT is calculated at approximately 5 minutes for a single screen or one page  Example: 24 slide lecture note consumes 2 hours SLT

Table 3: Example of SLT Calculation for Assessment Activity

	Assessment Activities	Assessment Duration (a)	Category	Preparation Duration (b)	Total SLT c=a+b
1	Online Quiz/Test	1 hour	Sync	1 hours	2 hours
2	Online Oral Presentation Session e.g., interview, oral presentation, viva voice, final year project presentation, progress presentation (if 0.5 hours, SLT is 3 hours)	1 hour	Sync	5 hours	6 hours
3	Multiple Choice Question Example: Quiz using uLearn	1 hour	Async	3 hours	4 hours
4	Written Assignment (Group/Individual) -1000 words e.g., lab report, case report, etc <ul style="list-style-type: none"> <li>• if written assignment is about 500 words, SLT is 2.5 hours (500/1000 x 5 hours)</li> <li>• if written assignment is about 1200 words, SLT is 6 hours (1200/1000 x 5 hours)</li> </ul>	-	Async	5 hours	5 hours
5	Project assignment (media-based assignment) Example: Video, podcast submission	10 minutes	Async	1 hour	1 hour 10 minutes

**References:**

- a) *e-Learning Guidelines for Malaysian HEIs, Jabatan Pendidikan Tinggi, Kementerian Pendidikan Tinggi Malaysia, 2014*
- b) *MEIPTA, Pelaksanaan PTG (Pembelajaran Dalam Talian)*
- c) *Online Teaching and Learning Guideline During COVID-19 Pandemic, Universiti Malaya, April 2020*
- d) *USM Online Assessment Guidelines for Remote Teaching, Universiti Sains Malaysia, March 2020*
- e) *UniMAP Garis Panduan Pelaksanaan Pengajaran Dan Pembelajaran Secara Dalam Talian 6 April 2020*

**5.3 Proposed Conversion of Face-To-Face Final Examination (FE) Into Online Assessment**

The proposed guidelines on the conversion of face to face final examination to online assessment in Table 4 is based on a real course, considering the following course ratio cases:

- Course work 70%, Final Examination 30% (non- engineering faculty)
- Course work 60%, Final Examination 40% (engineering technology faculty)
- Course work 40%, Final Examamination 60% (engineering faculty)

Note that, the course work assessment can be done using asynchronous and synchronous activities stated in section 2.0

Table 4: Proposed Final Examination to online assessment for non-engineering and engineering course.

Non Engineering Course (30% Final Exam)	Engineering Technology Course (40% Final Exam)	Engineering Course (60% Final Exam)
<p><b>Examination (30%)</b></p> <ul style="list-style-type: none"> <li>● MCQ /Subjective Questions/Essay= 2 hours</li> <li>● Preparation time = 6 hours</li> <li>● Total SLT for FE = 8 hours</li> </ul> <p><b>Proposal:</b> To convert 30% Final Examination to 30% CW</p>	<p><b>Examination (40%)</b></p> <ul style="list-style-type: none"> <li>● MCQ /Subjective Questions/Essay= 2 hours</li> <li>● Preparation time = 8 hours</li> <li>● Total SLT for FE = 10 hours</li> </ul> <p><b>Proposal:</b> To reduce Final Examination from 40% to 20% and convert the 20% examination to coursework.</p>	<p><b>Examination (60%)</b></p> <ul style="list-style-type: none"> <li>● MCQ /Subjective Questions/Essay= 3 hours</li> <li>● Preparation time = 9 hours</li> <li>● Total SLT for FE = 12 hours</li> </ul> <p><b>Proposal:</b> To reduce Final Examination from 60% to 20% and convert the 40% examination to coursework.</p>

<ul style="list-style-type: none"> <li>Asynchronous MCQ Online Quiz in uLearn (40 questions) = 2 hours</li> <li>Preparation time = 6 hours</li> <li>The existing 70% coursework is maintained using online T&amp; L stated in section 2.0.</li> <li>The above percentage change MUST consider the original FE vs LO mapping as stated in Teaching Plan</li> </ul>	<p>Hence, half of SLT will be converted into coursework. In this case the half of 2 hours examination (2hours+8 hours preparation) is converted into coursework (6 hours), while remaining 1 hour (plus 3 hours of preparation) is maintained for examination.</p> <p><b>Conversion examples:</b></p> <ul style="list-style-type: none"> <li>Examination: 20% Synchronous Online Quiz (20 questions= 1 hour (+ 3 hours preparation time) = 4 hours</li> <li>Coursework: 20% Writing assignment (1200 words, online submission) = 6 Hours</li> <li>The existing 40% coursework is maintained using online T&amp; L stated in section 2.0.</li> <li>The above percentage change MUST consider the original FE vs LO mapping as stated in Teaching Plan</li> <li><b>However, the proposed 20% FE can be converted to CW with appropriate SLT for cases such as bottleneck to conduct online FE for large number of students.</b></li> </ul>	<p>Hence, a two-third of SLT will be converted into coursework. In this case the two-third of 3 hours examination (3hours+9hours preparation) is converted into coursework (2 hours and 6 hours preparation time), while remaining 1 hour (plus 3 hours of preparation) is maintained for examination.</p> <p><b>Conversion Examples:</b></p> <ul style="list-style-type: none"> <li>Examination: 20% Synchronous Online Quiz (20 questions= 1 hour (+ 3 hours preparation time) = 4 hours</li> <li>Coursework: 40% Writing assignment (1600 words, online submission) = 8 Hours</li> <li>The existing 40% coursework is maintained using online T&amp; L stated in section 2.0.</li> <li>The CW and new FE percentage MUST follow the original FE vs LO mapping as stated in Teaching Plan</li> <li><b>However, the proposed 20% FE can be converted to CW with appropriate for cases such as bottleneck to conduct online FE for large number of students.</b></li> </ul>
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The changes proposed in the Table 4 is only a suggestion to academic members. Each academic member still can maintain the percentage of the coursework and the final examination but the assessment method can be change based on the nature of the course and faculty or centre approval.

There are two methods of summative assessment can be implemented, namely, replacing the final examination with continuous assessment or the online final examination. Faculty must be responsible and identify courses need to be implemented either both method without compromising the quality assurance.

Faculty or centre must develop their own guideline regarding the conversion (Table 4) and need to be properly documented for audit and accreditation purposes.

## **6. Procedures and guidelines for online examination vetting and online examination (PPA dan BPA)**

This procedure is applicable for courses that will be converted into a maximum of 20% examination work. For example, a 40-60 course (40% coursework and 60% final examination) to be converted to 80-20 course (80% coursework and 20% examination). It is required that the final examination and its converted-coursework components be vetted accordingly. Due any contingency situation, the vetting process needs to be carried out digitally (online). The current UTeM's Standard Operating Procedure for examination vetting must be applied according to each faculties and accreditation bodies requirement.

Examination vetting via electronic means can be carried out in two approaches, either through Offline Examination Vetting or Online Examination Vetting.

### **6.1 Offline Examination Vetting**

Offline examination vetting means the vetting session is to be done offline, in which the examination paper in digital version is to be distributed to the vetting panel members. The sharing of this document will be done through e-mail.

Three steps are required in performing this offline examination vetting:

#### **a. Encrypt the file**

If the examination paper document is to be shared digitally to the vetting panel members, we have to ensure its security, safety and confidentiality. Sharing through e-mail, for example, is not secure and safe enough. Therefore, the file needs to be password-protected and encrypted.

#### **b. Conduct the vetting offline**

The vetting session can be carried out in offline. The document – after it is encrypted and password-protected, is shared to the panel members through e-mail.

- a. The examination paper document and the Vetting Forms are shared to the vetting panel members through e-mail.
- b. Each panel member will access the examination paper document. In order to open the file, the password needs to be shared to them.
- c. Each panel member will provide his/her comments (preferably using the Review, New Comment feature in MS Word).

- d. The document is then submitted to the panel chair to gather all the comments provided by the panel. The panel chair also needs to fill in the Vetting form (Part B: Vetting panel checklist)
- e. Both the examination paper document and the vetting form will then be shared again to the panel members to verify their collective comments and to obtain their consensus/agreement.
- f. Once the agreement is obtained, the course coordinator/manager will make the necessary changes and submit to the panel chair. The panel chair will verify the changes and submit the final version to the assistant registrar for the subsequent administration stages.

**c. Save the two versions of the document**

For audit purposes, two versions of the examination paper need to be prepared.

**The original (draft) version with the comments by the panel members (from 2d above). The final version of the examination paper.**

- i. In addition, these four documents are also to be kept for audit exercise:
  - a. The completed Vetting form (from 2d above).
  - b. The Examination Confidentiality Declaration Form (Borang Perakuan Kerahsiaan Peperiksaan)
  - c. The Family Relationship Declaration Form (Borang Perakuan Kekeluargaan)
  - d. The flow chart of the vetting process
- ii. In other words, all these six documents must be signed digitally and are kept in a folder (separated from the course file) for audit purposes.

### **6.1.1 Online Examination Vetting**

The examination vetting can also be done online, and synchronously. The vetting session is to be carried out using teleconference or online meeting software/application such as Zoom, Microsoft Team, Cisco Webex, etc.

Steps in performing this online examination vetting:

**a. Options for sharing the document and editing it simultaneously**

- i. If each vetting panel member can edit the document simultaneously during the online meeting, the file needs to be uploaded to Google Doc (or any other cloud- based file sharing and file editing software).
- ii. If only one member can edit the document, then he/she will open the file in MS Word (track changes must be on) and perform the editing during the online meeting session.

**b. Use teleconferencing or online meeting software / application such as Zoom, Microsoft Team, Cisco Webex, etc.**



- i. During this session, all panel members will meet online at the same time to vet the examination paper.
- ii. Depending on the option taken (Option [1a] or Option [1b] above), the comments from the team members are gathered collectively during this session.
- iii. Also, during this session, the panel members are required to evaluate the quality of the examination paper. The examination vetting checklist (in Part B of the Vetting Form) needs to be completed.

### **6.1.2 Two versions of the exam paper are to be prepared**

Similar to offline examination vetting, the examination paper needs to be saved in two versions.

- i. The original (draft) version with the comments by the panel members during the vetting
- ii. The final version of the examination paper.
- iii. These two versions are needed for course audit purposes
- iv. All vetting related forms and declaration need to be kept for auditing purposes.

All documents which need signature must be sign digitally.

## **6.2 Online Assessment (Final Examination)**

The conversion of the Examination Work component to the Course Work component needs to be carried out carefully (an example of this conversion is discussed in Chapter 4). If the course coordinator/manager attempts to convert the 40-60 course (40% coursework and 60% final examination) to 80-20, the following issues must be considered:

- i. Course Learning Outcomes (CLO) and topics to be involved;
- ii. the coverage of content depends on the Test Specification Table (JSU).
- iii. the type of coursework activities to be introduced/added to replace the examination work component;
- iv. the duration/time (SLT) for the online final examination;
- v. number of assessment items depend on the assessment time allocated to that the specific method. For instance, for multiple choice questions (MCQs), 1.5 to 3 minutes per question

For the Online Assessment (Final Examination), several guidelines are recommended:

The two types of exams are: (i) written examination, and (ii) viva voce (oral examination).

### 6.2.1 Written examination

Written examination which need to be conducted must follow any circulars and directive which has been set on that contingency. Any non-engineering courses must adhere to any internal circular, JPT and also MQA while engineering based courses must adhere to internal and any accreditation bodies:

Edaran MQA: Panduan Pengendalian Program Pendidikan Tinggi Semasa dan pasca Perintah Kawalan Pergerakan COVID-19  
EAC, MBOT, etc: Guiding Principles on Teaching-Learning and Assessment Implementation During COVID-19 Pandemic

Written examination requires the students to sit-in the examination online. To do this, the time of the examination session must be fixed and consideration must be taken into on the capacity of the bandwidth and the system handicap, in which all registered students are required to be online. This can be done in the Learning Management System environment, i.e. ULearn.

### 6.2.2 Identify the type of examinations

For online assessment, two common types of examinations are available. Depending on the situation and needs of the course, i.e., CLOs, the course coordinator / manager needs to decide which type of examination that is suitable.

There are two types of written examinations:

#### i. Closed-book examination

Usually, in a closed-book examination session, the answers to the items/questions can be found in the textbooks or other resource materials. Therefore, the questions must be developed according to Bloom's Revised Taxonomy.

#### ii. Open-book examination

Unlike closed-book examinations, an open-book examination usually involves items which require higher-order thinking skills (HOTS) i.e, Analyzing, Evaluating and Creating (according to Bloom's Revised Taxonomy). Essay items that assess HOTS are commonly used in an open-book examination.

### 6.2.3 Types of examination questions

The types of examination items should be based on the level of taxonomy in the course learning outcomes (CLOs).

Table 5: Types of examination questions

	<b>Types of examination items/questions</b>	<b>Examples</b>	<b>Note</b>
1	<p><b>Select Response</b></p> <p><i>Students choose or 'select' an answer from a selection provided</i></p>	<ul style="list-style-type: none"> <li>• True-False</li> <li>• Multiple Choice Questions (MCQ)</li> <li>• Matching</li> </ul>	<p>These types of items are usually used to assess facts, understanding of ideas and application of principles</p>
2	<p><b>Constructed Response</b></p> <p><i>Students construct or 'supply' their own response.</i></p>	<ul style="list-style-type: none"> <li>• Essay</li> <li>• Short answer</li> <li>• Fill-in-the-blank</li> <li>• Sentence completion</li> </ul>	<p><b>Essay</b> items usually assess higher order thinking skills such as Analyzing, Evaluating and Creating. Not only it assesses students' understanding of ideas, it will also assess their ability to formulate an argument, support it with ideas and evidence, and formulate a conclusion. However, other types of items involving short answer, fill-in-the-blank or sentence completion usually involve lower order thinking skills (LOTS)</p>

#### **6.2.4 Recommendations to minimize cheating/dishonesty attempts**

Here are some suggestions to minimize the potential cheating/dishonesty among the students during the examination session:

- i. If the examination session involves students currently in other countries, the time differences with Malaysia must be considered. Students must sit for the examination session at the same time.
- ii. If the examination needs to be conducted in different session, then two sets of different questions must be prepared. The two sets of questions must measure the same CLOs with the same quality.
- iii. To avoid any possibility of students assisting each other during the examination session, is to have the questions set and answer for Multiple Choice Questions must be made in random order which can be set from the question bank in LMS.
- iv. Open-book examination can be used as an alternative to minimize cheating/dishonesty. As the open-book examination usually involves HOTS (Higher Order Thinking Skills) questions, students require more cognitive effort to analyse, synthesize, evaluate, and construct their own responses.
- v. Several sets of questions are developed and randomly assigned to the students to minimize potential cheating/dishonesty and sharing of answers.
- vi. Viva-Voice examination must be conducted through video-based synchronous session to avoid cheating and dishonesty.

#### **6.2.5 Viva voce (Oral Examination)**

Viva voce can be used as an option for the final examination. It can be used to replace the online written examination which requires a specific time for all students. This session also serves to complement the following purposes:

- i. To confirm student understanding and defending it in verbal.
- ii. To demonstrate the student's own work such as case study, final-year project, etc.
- iii. To Investigate non-cognitive abilities such as communication skills, ethics and personal
- iv. values, etc., in relation to the intended learning outcomes.

The following are the types of online viva:

- i. One-to-one online viva – one examiner to one student viva.
- ii. One examiner to a group of student's online viva – one examiner to more than one student (the recommendation is maximum 5 students).
- iii. A panel of examiners to one student online viva – more than one examiner (maximum of five examiners) to one student
- iv. A panel of examiners to a group of student's online viva – more than one examiner to more than one student.

The following are the recommended procedures to conduct an online viva:

- i. Determine the learning outcomes which need to be assessed.
- ii. Develop an assessment rubric for the online viva which fit the learning outcome.
- iii. A series of questions to gauge student ability should be developed to ensure the consistency of the online assessment.
- iv. Determine the duration of online viva (the time required depends on the type of online viva and SLT).
- v. Set a schedule for the online viva.
- vi. Send an invitation to the student for the online viva session.
- vii. If more than one examiner is involved in the online viva, calibrate the expert judgment through discussion prior to the online viva session.
- viii. Record the session for internal quality assurance such as ISO and accreditation body.
- ix. Send the recorded online viva and mark to the examination/academic office at PTJ.

## 7. CONCLUSION

e-Learning and e-Assessment has been adopted by many institutions of higher learning institution locally and abroad. This alternative approach enables the T&L and assessment process to be fully implemented online or being used as an alternate learning session. Implementation of e-Learning and e-Assessment are also one of the factors of interest to students, both locally and internationally as the students can take the teaching approach by using technology and the overall duration the study can be shortened for diploma, degree or postgraduate degree levels. The e-Learning and e-Assessment approaches are applicable in all any circumstances or emergency situations such as in the current MCO (Movement Control Order) for Covid-19. The implementation of e-Learning and e-Assessment methods must be approved and properly documented at the faculty or center level.

Despite the enthusiasm of fully online learning delivery and assessment methods, care must be taken by academic members. All academic members adapting the Online Learning and Online Assessment mode must make sure the course learning outcomes (CLO) of the courses, namely the domains involved (cognitive, affective, and psychomotor) and the domain content are all thoroughly adhered to. Correct instructional design and assessment method must be chosen carefully to maintain the delivery and assessment quality of the courses. The constructive alignment of CLO with assessment is the main concern of the MQA, EAC and other accreditation bodies and UTeM OBE agenda.

### ***Further readings for planning and conducting online assessment:***

- i. Online Assessment Platform White Papers (strongly recommended)  
<https://www.eklavya.in/WhitePaper.aspx>
- ii. Best Practices for Delivering Online Tests and Quizzes

<https://uvacollab.screenstepslive.com/s/help/m/assessments/l/613778-best-practices-for-delivering-online-tests-quizzes>

- iii. Five guidelines for developing good online assessments  
<https://elearningindustry.com/developing-good-online-assessments-guidelines>
- iv. Learner assessment in online courses: Best practices and more  
<https://www.learnworlds.com/learner-assessment-best-practices-course-design/>
- v. USM Online Assessment Guidelines for Remote Teaching
- vi. UM Online and Teaching Guideline During Covid-19 Pandemic