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4 Januari 2021

***SEPERTI SENARAI EDARAN***

Tuan/Puan,

**MAKLUMAN BERKENAAN *ACCREDITATION MANUAL FOR ONLINE QUANTITY SURVEYING PROGRAMME, JANUARY 2021***

Dengan segala hormatnya perkara tersebut di atas adalah dirujuk.

2. Lembaga Juruukur Bahan Malaysia (LJBM) ingin menarik perhatian semua Pemberi Pendidikan Tinggi (PPT) yang mengendalikan program ukur bahan yang diiktiraf, tentang ***Accreditation Manual For Online Quantity Surveying Programme, January 2021*** yang telah dilancarkan pada 27hb Januari 2021.

3. Sukacita dimaklumkan bahawa dalam menghadapi situasi semasa berikutan penularan wabak pandemik Covid-19, manual ini telah disediakan sebagai dokumen rujukan dan panduan kepada PPT untuk mengendalikan program ukur bahan secara bersemuka dan atas talian.

4. Adalah diingatkan bahawa manual ini tidak tertakluk kepada program secara atas talian sahaja dan perlu **dibaca bersama dengan *Accreditation Manual For Quantity Surveying Programme 3rd Edition (Aug 2019).*** Diharapkan agar pihak PPT mengambil maklum dengan ketetapan ini agar tidak menjejaskan status akreditasi.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

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QUANTITY SURVEYING
ACCREDITATION COUNCIL

# ACCREDITATION MANUAL FOR ONLINE QUANTITY SURVEYING PROGRAMMES

THIS MANUAL IS A SUPPLEMENT TO THE ACCREDITATION MANUAL FOR QUANTITY SURVEYING PROGRAMMES (3RD EDITON, AUGUST 2019), THAT PROVIDES ADDITIONAL REQUIREMENTS FOR THE ACCREDITATION OF ONLINE QUANTITY SURVEYING PROGRAMMES.

**JANUARY 2021**

# PREFACE

There is a strong indication that higher education providers worldwide began to consider online teaching and learning over the conventional teaching and learning format. Powered by the latest technological advancement which supports teaching and learning activities, online teaching and learning attract considerable interest besides offering many advantages including economies in cost, broad student access, flexible teaching and learning approaches, and enhanced opportunities. The move to online teaching and learning via various online platforms presents pedagogical implications, where the learning environment is required to be reengineered to capture the advantages of the learning opportunities offered by the new technologies.

Acknowledging the growing interest placed by Higher Education Providers (HEP) worldwide on online quantity surveying programmes, the Quantity Surveying Accreditation Council (QSAC) decided in October 2017 to form a task force to establish a supplementary manual that provides guidelines to higher education providers in seeking accreditation from the Board of Quantity Surveyors Malaysia (BQSM) for online quantity surveying degree and diploma programmes. The task force, which comprised academics from Universiti Teknologi Malaysia (UTM) has reviewed relevant literature and practices concerning online teaching and learning, and developed this manual to that effect. QSAC is grateful to Assoc. Prof. Sr Dr. Kherun Nita Ali, Assoc. Prof. Sr Dr. Sarajul Fikri Mohamed, Sr Dr. Shamsulhadi Bandi, Sr Dr. Fara Diva Mustapa, Sr Dr. Zuhaili Mohamad Ramly, Sr Dr. Muzani Mustapa and Dr. Hamizah Liyana Tajul Ariffin for developing the Supplementary Accreditation Manual For Online Quantity Surveying Programmes. QSAC would also like to extend its appreciation to Sr Dr. Wan Maimun Wan Abdullah, Sr Khairani Ahmad, and Sr Dr. Fadhlin Abdullah for initiating the groundwork in developing the manual, to the present QSAC chairman, Sr Roziyah Ismail for her dedication, motivation and enthusiasm in ensuring the accomplishment of the manual, and to the present QSAC Council for reviewing and refining the guidelines in the manual, and to Cik Nur Mawarddah Yahya from the secretariat, for the administrative assistance throughout the process.

This manual shall be construed as a supplement to the Accreditation Manual for Quantity Surveying Programmes (3rd Edition, August 2019), and provides additional requirements and guidelines to HEP when seeking accreditation from BQSM for online Quantity Surveying programmes. It also serves as an additional reference for Evaluation Panel appointed by BQSM in evaluating and assessing such online quantity surveying programmes for accreditation.

**QUANTITY SURVEYING ACCREDITATION COUNCIL**
BOARD OF QUANTITY SURVEYORS MALAYSIA

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## GLOSSARY

| Term | Description |
|---|---|
| Lecturer | A person who delivers knowledge. It shall also mean a teacher or an instructor. |
| Student | A person who is the recipient of knowledge. It shall also mean a learner. |
| Programme | Quantity Surveying Programme at a degree or diploma level. |
| Course | Courses are components of a programme. The term is used interchangeably with subjects, units or modules. |
| Blended Learning | Learning through the online media as well as traditional face-to-face teaching. |
| Hybrid learning | Mixed online learning delivery |

# 1.0 INTRODUCTION

This manual is a supplement to the Accreditation Manual for Quantity Surveying Programmes (3rd Edition, August 2019) for the Quantity Surveying Accreditation Council (QSAC), Board of Quantity Surveyors Malaysia (BQSM). It presents the guidelines and additional requirements to Higher Education Providers (HEP) when seeking accreditation from BQSM for their Quantity Surveying Programmes, conducted via an online platform. This manual also serves as additional reference for Evaluation Panel appointed by BQSM in evaluating and assessing such online QS programmes for accreditation.

Whilst showing their capacity and capability in delivering an online programmes, the HEP is expected to demonstrate all aspects required in an online teaching and learning process, i.e., platform used for content delivery; mode of communications between lecturers and students; the system used to verify students' physical profile; and authenticity of students' submissions, project assessments, and examinations. The HEP is essentially responsible for providing sufficient evidence of their online teaching and learning that have taken place. Hence, this supplementary manual also lists out the evidence required to guide the HEP and the Evaluation Panel in the online programme's accreditation process.

In seeking accreditation from BQSM for Quantity Surveying Programmes, conducted via an online platform, HEPs need to fulfill the requirements set in the Accreditation Manual for Quantity Surveying Programmes (3rd Edition, August 2019) and this Supplementary Manual accordingly. In the event of any discrepancy or inconsistency between the two documents, the Accreditation Manual for Quantity Surveying Programmes (3rd Edition, August 2018) shall prevail.

## 1.1 Objectives

The objectives of this supplementary manual are:

i. To guide HEP in their preparation to get their entirely online programmes accredited.
ii. To guide HEP in their preparation to get their partially online programmes accredited.
iii. To assist the Evaluation Panel in the accreditation process for the online programmes.

## 2.0 SCOPE

This supplementary manual guides HEP based on two foundations:

### 2.1 A programme that is entirely conducted on an online platform

In the era of the Internet, which provides a technology that connects people from any part of the world, education has made its way to working individuals who found it difficult to attend a full-time physical attendance class. With the current technology, the HEP can provide programmes that could be enrolled by such individuals. These programmes connect students and instructors via an online platform, which allows the programme to be conducted entirely online, from the studens't registration day right through to the end of the final semester.

**HEP shall show a complete Standard of Procedure for such an online programme**.

### 2.2 A programme that is partially conducted on an online platform

Other than a fully online programme, there are HEPs that conduct partially online programmes. The learning approaches such as Blended Learning that mix the face-to-face physical approach and online approach is seen to be the way for programmes conducted partially online.

**HEP shall provide its community with a relevant guideline for online teaching and learning.**

## 3.0 ONLINE LEARNING ENVIRONMENT

The online learning environment is an environment with no physical location in which the lecturers and students are separated by space. It also refers to the e-learning environment used for knowledge acquisition within computer-mediated digital systems. Examples of learning platform that allows sharing of educational materials with the students via the web include Moodle, WebCT, and Blackboard. Students learn through interacting with online learning contents, either text, images, animations, videos, or interactive games, and through participating in online course activities such as discussions, quizzes, and hands-on activities.

Teaching and learning standards focus on how an online programme develops its curriculum; how the programme's lecturers deliver that curriculum to students; and how students' progress in the curriculum is assessed. The online learning experience, which comprised of students, lecturers, and the course curriculum, requires the use of technological tools for accessing the online environment.

## 3.1 Online Teaching and Learning Delivery

Online teaching and learning can be delivered synchronously, asynchronously, or using both approaches.

### 3.1.1 Synchronous teaching and learning

Synchronous learning refers to teaching and learning that occur in real-time when both lecturers and students are physically or virtually present at the same time, but not in the same geographical location. For example, live online lectures or live talks by invited speakers using real-time synchronous meeting tools such as Google Meet, Microsoft Team, Zoom, Webex, or synchronous social media tools such as Youtube Live Stream, Facebook Live Video, or Multiple Video Call features in Whatsapp or Telegram.

The above mentioned tools allow both lecturers and students to participate by sharing ideas through 1] verbal comments on screen 2] written comments via chatbox feature and 3] present the lecturer's teaching materials or students' project work using the screen sharing feature. The lecturer is fully aware of the students' readiness for real-time teaching delivery.

**HEP shall show a lesson plan that contains the detailed implementation of synchronous delivery**.

### 3.1.2 Asynchronous teaching and learning

Asynchronous learning refers to teaching and learning that occur, not in real-time, but at different times. It can be in the form of pre-recorded lectures or talks, video recording of a computer screen, and an audio-combined slideshow which can be shared with the intended students later. Students will be able to watch or listen to them repetitively at any convenient time. Asynchronous learning does not require real-time interaction; instead, content is available online for students to access when it best suits their schedules, and assignments are completed to deadlines.

Common asynchronous online learning methods include self-guided lesson modules, pre-recorded video contents, virtual libraries, lecture notes, and online discussion boards or social media platforms.

**HEP shall show in their lesson plan that the implementation of asynchronous is suitable and sufficient with the Student Learning Time (SLT).**

### 3.1.3 Mixed online learning delivery

Programmes can also use a mixed online learning delivery, which includes a mix of both synchronous and asynchronous. A lecturer using a hybrid learning approach delivers a live lecture in the classroom and to remote students simultaneously. Alternatively, the lecturer may begin his or her lecture with real-time teaching and later continue the lesson by posting a topic from the lecture to be discussed in the discussion boards.

Many online courses use a mix of synchronous and asynchronous learning, combining real-time conferencing with self-paced assignments, or balancing pre-recorded lectures with live discussion sessions.

**HEP shall clearly show in their lesson plan how these approaches if adopted, are being implemented in their programme**.

### 3.1.4 Attendance and participations

Either synchronous, asynchronous, or hybrid learning model, students are expected to attend the lectures and participate in the virtual classes and also the activities. Evidence of attendance and their participations are crucial in ensuring that the knowledge has been delivered to the students. Some examples used by lecturers to record students' attendance are the Students Attendance Log, Screen Capture during online class, online attendance forms, and QR code attendance. A discussion thread in a virtual chatroom or forum containing time logs when the students respond can be considered evidence of students' participation in online learning.

**HEP shall demonstrate how students' attendance and participations are recorded.**

## 3.2 Online Teaching and Learning Assessment

The assessment aims to evaluate students against standards commensurate with the programme's requirements to ensure that students reach a level of attainment

appropriate for progression, and in the final stage, for the award of the degree. Assessments will also provide students with an indication of their strengths and weaknesses across the curriculum and other personal development areas so that they can improve their performance. Online teaching and learning assessments can be summative or formative assessment.

The goal of formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. It also intentionally wants to help students identify their strengths and weaknesses and target areas that need work on and help faculty recognise where students are struggling and immediately address them. It is to improve the students' learning.

Meanwhile, the summative assessment aims to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark. It is to evaluate the students' achievements.

In assessing students' performance, it is vital to verify the students' identity. This verification is to ensure that the students who registered for the programme are the ones who gain benefit from the programme.

### 3.2.1 Types of Assessment

Assessing students' work online can be done in various ways, and lecturers must decide on the assessment strategy that works best for the students. Assessment methods may comprise a series of assessment components which include course-content examinations via test, examinations, reports; studios; oral presentations, and undergraduate projects. HEP must ensure the fairness, reliability, and integrity of the assessments.

The following are the types of assessment for online learning courses which are known commonly adopted by HEP.

#### 3.2.1.1 Final examination and test

The final examination is undertaken during the examination week at the end of each semester. Sitting for the final examination can be done via computer-delivered based. The examination that has the duration taken more than one hour should be broken down into not more than one hour with intermittent break in between the hour. Considerations taken for the final examination can also be applied to test or quizzes.

**HEP shall show the procedure on how examinations and tests are conducted in ensuring the integrity of the assessment. HEP shall also provide sufficient evidence that learners are authenticated before and during the online assessments.**

In the case of the open-book examination, lecturers should devise extended response questions that require students to answer in more critical and analytical ways thus encouraging high-order thinking skills in their students; as compared to closed-book or traditional exams that tend to encourage memorisation learning and more simple application of knowledge. An open book exam can also mean that students are provided with the exam questions before sitting the formal exam or complete as a 'take-home' exam. The examples of high level cognitive learning based on Bloom's taxonomy include hypotheticals, clarifications, reasonings, implications, consequences, or viewpoints kinds of questions.

#### 3.2.1.2 Report-based assessments

Students will be given their coursework tasks and hand-in dates schedule at the beginning of each semester. The coursework forms the basis of continuous assessment that contributes to the grade for a particular course. A report-based submission should be duly submitted in digital format to the lecturer for assessment within the stipulated deadline, as indicated in the course outline.

Submission can be both in real-time or in normal digital submission. Should the students reside in a different time zone with the lecturer, the submission should be based on the HEP time zone. The format should be accessible for the lecturer to review and at any time possible. The lecturer should be able to identify any quality infringement through independent online checking (for example, Turnitin). The types of report-based assessment are deemed to include the following:

i. Case study
ii. Problem-based assignments
iii. Case review
iv. Log-book or industrial training report
    With regards to the industrial training report, the lecturer should be able to check the log-book via a portal dedicated to industrial training management
v. Fieldwork report

#### 3.2.1.3 Measurement works

Measurement works or studio works should be marked individually for measurement courses and documentations. Any synchronous or asynchronous measurement studio should be recorded as evidence. Submission should be in a digital manner for assessments and within the stipulated permissible time set by the lecturer. An advanced measurement work can be considered for internet-based remote access and support using specialised measurement software.

#### 3.2.1.4 Presentation

Presentation is one of the core generic skills required by BQSM. Hence, assessment for presentation skills could be made via webinars or pre-recorded video uploaded to suitable platforms for assessments. Assessments will be made by the lecturer using an appropriate rubric for presentations. Any synchronous or asynchronous students' presentations should be recorded as evidence.

#### 3.2.1.5 Undergraduate Project/ Dissertations

Evidence of online supervision should be documented throughout the supervision process. Assessment for undergraduate projects can be made via digital submission within the stipulated deadline outlined by the lecturer using a dedicated rubric set.

i. Undergraduate Project/ Dissertation Report
   The report submission should be via online digital submission.

ii. Presentation of the Undergraduate Project/ Dissertation
   Submission and assessment can be made via webinar/pre-recorded video to be uploaded into suitable platforms for assessments. Assessments will be made by the lecturer using an appropriate rubric for presentations.

#### 3.2.1.6 Capstone Project

A capstone project is emphasised in final year students. The capstone project aims to develop students' ability to identify, analyse, and solve problems, evaluate alternative options, and propose appropriate solutions by integrating knowledge and skills. Evidence

of online supervision for the capstone project should be documented throughout the process.

Assessment of capstone project can be made by group report submission and presentation.

i. Capstone Project Report
   The report submission should be via online digital submission.

ii. Presentation of the Undergraduate Project
   Submission and assessment can be made via webinar/pre-recorded video to be uploaded into suitable platforms for assessments. Assessments will be made by the lecturer using an appropriate rubric for presentations.

### 3.2.2 Method of Assessment

In line with the online delivery mode of the programme, which measures capability and performance on a programme basis, relative to the stated programme objectives, and particularly the generic attributes, knowledge, and understanding of the QS field, specific assessment processes must be in place.

The overall assessment process demonstrates that the stated outcomes are being measured and achieved and that the results are being applied to the continuing development of the programme.

**HEP shall demonstrate that the measurement of outcomes is consistent across all students, suitable for the online nature of the programme.**

Assessment methods may include course-content examinations; project reports; self, peer, and mentor assessments of performance; student portfolios and journals; professional interviews of graduating students; and other appropriate means proved to be suitable for an online environment both formative (which include feedback) and summative. Students must be required to perform in at least one accessible situation involving major and wide-ranging challenges, drawing on knowledge and capability from different courses areas.

To maintain an acceptable degree of integrity across the prescribed methods of assessment, in this case, the summative assessments, HEP shall demonstrate that any of the following supervision methods on assessment or preferably both, suitable for an online learning environment are in place:

#### 3.2.2.1 Invigilated (Real-Time)

i. Physical (Center-based)
Assessment takes place at a dedicated venue that will be supervised by staff or appointed invigilators.

ii. Online (Center-based)
Assessment takes place at a dedicated venue that will be supervised by staff or appointed invigilators.

#### 3.2.2.2 Remote Invigilation (Time-bound)

HEP shall provide sufficient evidence that learners are authenticated before taking online assessments. A timer shall be provided and accessible to the students with questions to be randomised across assessments. An online remote invigilation facility could be provided to affect assessments.

HEP need to ensure that the following process in remote invigilation processes is complied with and documented:

i. Pre-check
The technical environment is all set to support a remotely invigilated assessment.

ii. Candidate authentication
Making sure only the rightful candidate sits for the assessment.

iii. Secured environment
No access to the secured surrounding, which can compromise the integrity of the assessment.

iv. Assessment supervision
Watching and making sure that assessment rules comply with the HEP's standards.

v. Reporting
HEP to ensure any suspicious behaviour and any issues related to supervision are reported and subsequent actions are taken.

## 3.3 Online Teaching and Learning Infrastructure

There are infrastructure requirements that HEP needs to provide for online teaching and learning. The infrastructure is essential to ensure the availability of remote access for students to the lecturers and their teaching materials.

### 3.3.1 Learning Management System

A Learning Management System (LMS), is a technology-based management system that helps educationist in managing their educational courses. It must be connected to the Internet, and hence, makes it easily accessible for remote learners.

**HEP shall have an LMS in place should their programme is to be made either fully or partially online.**

Regardless of whether it is a cloud-based deployment or open-source license, LMS stems from four key features, i.e. delivery; communication; tracking, and reporting; and assessment.

i. Delivery
The system allows synchronous or asynchronous lectures and sharing presentation materials by or for the participating students.

ii. Communication
Exchange of information between students and lecturers (submission of project work included) or among the member of a group of students, which can be used as evidence of learning.

iii. Tracking and reporting
The system keeps track of students' activities or progress, which can also be used as evidence of learning.

iv. Assessment
The system has a feature that helps lecturers develop and conduct tests, quizzes, examinations, or the like to assess the students' achievement.

### 3.3.2 Facilities

HEP shall ensure adequate and effective teaching and learning support facilities, computing

and information technology systems, and general infrastructure to meet the programme objectives or outcomes.

In evaluating the adequacy and effectiveness of teaching and learning facilities, the following technical requirements will be assessed:

i. Hardware with adequate internet connectivity.
   Computers with wired or wireless internet connections, cameras, microphones, and speakers are examples of hardware required for online teaching and learning.

ii. Specialised software
   Students to be exposed to specialised measurement software according to their syllabus. HEP should be able to provide evidence on such exposure, mode of access, delivery, and assessment of student's work through any available features. This proprietary software is officially procured with licenses that comply with relevant laws and regulations. Non-licensed software is to be avoided. Public license software such as Open Sources Software is deemed appropriate and acceptable.

iii. Server and backup Server
   HEP should provide sufficient database servers complete with backup hardware to support the overall IT infrastructure.

iv. Digital access to learning resources.
   Such as e-books and journals from the HEP's library.

v. A system that can authenticate the rightful student during the assessment

There should be a person-in-charge who is technically dedicated and qualified to take care of all the above teaching and learning facilities.

## 4.0 EVIDENCE OF TEACHING AND LEARNING

An essential element of teaching and learning is the compilation and presentation of evidence that demonstrates the teaching approaches contribute to student learning or that students are meeting the goals set for their learning and the expectations for teaching set by the department, faculty, or discipline. In the case of online teaching and learning, this evidence is to verify the rightful student that has gone through the learning process.

## 4.1 Evidence of teaching for each course or group of courses

The existence of a system or online mechanism that proves the teaching delivery has genuinely taken place. HEP should be able to demonstrate that there is an online avenue for the lecturers (not limited to):

i. To deliver lectures or tutorials either synchronously or asynchronously
ii. To share their learning materials with the students
iii. To convey any instructions or announcements
iv. To discuss with students on issues related to the courses they taught
v. To guide the students if they require a hands-on approach
vi. To give feedback on the students' work

## 4.2 Evidence of learning for each course or group of courses

The existence of a system or online mechanism that proves the actual student is experiencing the learning process. HEP should be able to demonstrate that there is a way to authenticate the student for the following (not limited to):

i. Attendance for any learning activities, e.g. online lectures, talks, discussion, tutorials, or measurement studios
ii. Authorships of the projects, assignments, measurement works, or any documents
iii. Authorships of the project, assignments, measurement works, or any documents that are produced using a specialised software
iv. Submission of their projects, assignments, measurement works, or any documents
v. Interaction between the student and the lecturer
vi. Interaction among the students in the case of group assignments

It can be in the form of (not limited to):

i. Screenshots of class attendance or students' presentations
ii. List of students' logs to talks or forum
iii. Submission logs on the e-learning platform
iv. Email communications when guiding students in their projects
v. Photographs or videos that show students doing their measurements, assignments, or any other given tasks by themselves
vi. Video recording of the students taking real-time test or exam
vii. An advanced system that could detect students' physical profile such as Facial Recognition during real-time test or exam.

## APPENDIX I

## Accreditation Assessment Form for Online Programme

*This form can be used to assess an individual course or the entire programmes. All evidence must be available for the accreditation considerations. Please (✓) in the box provided.*

| | Elements | Elaborations | Availability |
|---|---|---|---|
| **1.** | **Content delivery** | | |
| a. | Lecture | Synchronous | ☐ Recorded or pre-recorded or live stream recorded video **OR/AND**<br>☐ Shared learning materials<br>☐ Others, please state:<br>_____ |
| | | Asynchronous | ☐ Pre-recorded video **OR/AND**<br>☐ Pre-recorded shared learning materials |
| b. | Tutorial | Synchronous | ☐ Recorded or pre-recorded or live stream recorded video **OR/AND**<br>☐ Shared learning materials<br>☐ Others, please state:<br>_____ |
| | | Asynchronous | ☐ Pre-recorded video **OR/AND**<br>☐ Pre-recorded shared learning materials |
| c. | Talks | Synchronous | ☐ Recorded or pre-recorded or live stream recorded video **OR/AND**<br>☐ Shared learning materials<br>☐ Others, please state:<br>_____ |
| | | Asynchronous | ☐ Pre-recorded video **OR/AND**<br>☐ Pre-recorded shared learning materials |
| d. | Attendance | Attendance and record | ☐ Screenshot of the online classroom **OR/AND**<br>☐ QRcode attendance record<br>☐ Others, please state:<br>_____ |

| | Elements | Elaborations | Availability |
|---|---|---|---|
| **2.** | **Remote learning** | | |
| a. | Lecturer-Student Communication | The platform used for verbal or written communication | ☐ Forum or any interaction features on the Learning Management System **OR/AND**<br>☐ Email<br>☐ Other social media platform, please state:<br>_____ |
| b. | Communication during an ongoing class - Class discussion | A platform that allows the student to get involved in a class | ☐ Forum or any interaction features on the Learning Management System **OR/AND**<br>☐ Email<br>☐ Other social media platform, please state:<br>_____ |
| c. | Communication among students - Student-student discussion | The platform used for verbal or written communication | ☐ Forum or any interaction features on Learning Management System **OR/AND**<br>☐ Email<br>☐ Other social media platform, please state:<br>_____ |
| **3.** | **Individual project/ assignment** | | |
| a. | Assigning process | The mechanism to inform students e.g. through the Learning Management System. | ☐ Learning Management System |
| b. | Constructing process | a) Self-recorded video while carrying out the project.<br>b) Uploading progress report on an online platform. | ☐ Students' logs on the Learning Management System<br>☐ Recorded video **OR/AND**<br>☐ Photograph |
| c. | Discussion platform between lecturer and student | Record of discussion that had taken place such as in a forum session or private messaging in an online platform. | ☐ Forum or any interaction features on the Learning Management System **OR/AND**<br>☐ Chatroom or group messaging on the social media platform |
| d. | Submission | Records of coursework submission through an online platform. | ☐ Students' logs on the Learning Management System for submission **OR/AND**<br>☐ Email |

| | Elements | Elaborations | Availability |
|---|---|---|---|
| e. | Authentication monitoring | Checking students' logs on an online platform | ☐ Students' logs **OR/AND**<br>☐ Email |
| f. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log or private message |
| g. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature |
| **4.** | **Group Coursework** | | |
| a. | Assigning process | The mechanism to inform students, e.g. through the Learning Management System. | ☐ Learning Management System |
| b. | Constructing process | a) Self-recorded video while carrying out the project.<br>b) Uploading progress report on an online platform. | ☐ Recorded video **OR/AND**<br>☐ Photograph<br>☐ Students' logs on the Learning Management System |
| c. | Discussion platform between lecturer and students | Record of discussion took place in a group forum session or private messaging in an online platform. | ☐ Forum or any communication features on the Learning Management System **OR/AND**<br>☐ Chatroom or group messaging on the social media platform |
| d. | Discussion among group members | Discussion with group members in an online platform | ☐ Forum or any communication features on the Learning Management System **OR/AND**<br>☐ Chatroom or group messaging on the social media platform |
| e. | Submission | Records of coursework submission through an online platform. | ☐ Students' logs on the Learning Management System for submission **OR/AND**<br>☐ Email |
| f. | Authentication monitoring | Checking students' logs on an online platform | ☐ Students' logs on the Learning Management System **OR/AND**<br>☐ Email |
| g. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log or private messages **OR/AND**<br>☐ Email |
| h. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature **OR/AND**<br>☐ Email |

| | Elements | Elaborations | Availability |
|---|---|---|---|
| **5.** | **Measurement studio** | | |
| a. | Assigning process | The mechanism to inform students, e.g. through the Learning Management System. | ☐ Learning Management System |
| b. | Constructing process | a) Self-recorded video while carrying out the project.<br>b) Uploading progress report on an online platform.<br>c) The use of specialised measurement software. | ☐ Recorded video **OR/AND**<br>☐ Photograph |
| | | | ☐ Students' logs on the Learning Management System<br>☐ Specialised software on online student's computer |
| c. | Discussion between lecturer and student platform | Discussion such as Forum or Private Messaging in an online platform | ☐ Forum or any communication features on the Learning Management System **OR/AND**<br>☐ Chatroom or group messaging on the social media platform |
| d. | Discussion among group members | Discussion with group members in an online platform | ☐ Forum or any communication features on the Learning Management System **OR/AND**<br>☐ Chatroom or group messaging on the social media platform |
| e. | Submission | Records of measurement coursework submission through an online platform. | ☐ Snapshots of the measurement work or in the case of dimension papers, snapshots of the scanned dimension papers and upload logs on Learning Management System **OR/AND**<br>☐ Email |
| f. | Authentication monitoring | Checking students' logs on an online platform | ☐ Students' logs on the Learning Management System **OR/AND**<br>☐ Email |
| g. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log on the Learning Management System or private message **OR/AND**<br>☐ Email |
| h. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature **OR/AND**<br>☐ Email |

| | Elements | Elaborations | Availability |
|---|---|---|---|
| **6.** | **Test, quiz, or similar** | | |
| a. | Lecturer's preparation | Subjective questions, multiple-choice questions, or others to be made available in an online platform either closed or open book test, quiz, or similar.<br><br>An open book test, quiz, or similar requires higher-order taxonomies. | ☐ Learning Management System |
| b. | Students taking test or quiz | a) On an online platform<br>b) Invigilated<br>c) Remote Invigilation | ☐ Students' logs on the Learning Management System **OR/AND**<br>☐ Dedicated physical venue |
| c. | Authentication monitoring | a) Manual online monitoring using the webcam.<br>b) Facial Recognition System/online proctoring.<br>c) Centre-based Invigilated test or exam.<br>d) Other mechanisms to verify students' profiles. | ☐ Recorded video of students taking the test or quiz on Online Meeting platform **OR/AND**<br>☐ Facial Recognition System report<br>☐ Invigilator's report |
| d. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log on the Learning Management System or private message **OR/AND**<br>☐ Email |
| e. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature **OR/AND**<br>☐ Email |
| **7.** | **Final Exam** | | |
| a. | Lecturers' preparation | Subjective questions, multiple-choice questions, or others to be made available in an online platform either closed or open-book examination.<br>An open book or take-home examination requires higher-order taxonomies. | ☐ Learning Management System<br>☐ Online assessment integrity assurance for example letter of undertaking or letter of indemnity signed by the students |
| b. | Students taking the final exam | a) On an online platform<br>b) Invigilated<br>c) Remote Invigilation | ☐ Students' logs on to the Learning Management System **OR/AND**<br>☐ Dedicated physical venue |

| | Elements | Elaborations | Availability |
|---|---|---|---|
| c. | Authentication monitoring | a) Manual online monitoring using a webcam.<br>b) Facial Recognition System/online proctoring.<br>c) Centre-based Invigilated test or exam.<br>d) Other mechanisms to verify students' profiles. | ☐ Recorded video of students taking the test or quiz on Online Meeting platform<br>**OR/AND**<br>☐ Facial Recognition System report<br>☐ Invigilator's report |
| d. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log on the Learning Management System or private message **OR/AND**<br>☐ Email |
| e. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature **OR/AND**<br>☐ Email |
| **8.** | **Presentation** | | |
| a. | Presentation | Synchronous | ☐ Recorded or pre-recorded or live stream recorded video<br>**OR/AND**<br>☐ Shared presentation materials |
| | | Asynchronous | ☐ Pre-recorded shared presentation materials |
| b. | Presentation Material | The mechanism for sharing presentation materials | ☐ Students' logs on the Learning Management System for sharing presentation materials |
| c. | Assessment and feedback | The mechanism to assess and provide feedback to students | ☐ Lecturer's log or private message **OR/AND**<br>☐ Live feedback<br>☐ Video or Audio recorded feedback |
| d. | Grading information | The mechanism to inform students' their grades | ☐ Learning Management System reporting feature **OR/AND**<br>☐ Email |

## APPENDIX II

## Checklist on the Online Teaching and Learning Facilities

***All evidence*** *must be available for the accreditation considerations. Please tick (✓) in the box provided.*

| | Item | Evidence | Availability | |
|---|---|---|---|---|
| **1.** | **Facilities** | | | |
| **a.** | **Learning Management System** | Name of the system in place | ☐ Yes | ☐ No |
| **b.** | **Communication system** | The communication platform in place (e.g. Email, other social media platforms, etc.) | ☐ Yes | ☐ No |
| **c.** | **Server for data storage** | The availability of servers and a description of the purpose of the servers | ☐ Yes | ☐ No |
| **d.** | **Authentication System or Proctoring Software** | The software/tool and the manual for operation | ☐ Yes | ☐ No |
| **e.** | **Dedicated technical staff or administrator** | A description of the overall structure of the technical organisation | ☐ Yes | ☐ No |
| **2.** | **Staff Training** | | | |
| **a.** | **System** | Learning Management System | ☐ Yes | ☐ No |
| | | Proctoring System | ☐ Yes | ☐ No |
| **b.** | **Online Teaching and Learning** | A record on online teaching and learning training | ☐ Yes | ☐ No |
| **3.** | **Guidelines or Standard of Procedures (SOP)** | | | |
| **a.** | **A specific guideline that supports the implementation of online teaching and learning** | Guides for Online Teaching and Learning | ☐ Yes | ☐ No |
| | | A quality framework and a standard operating procedure for Online Assessments | ☐ Yes | ☐ No |
| | | A quality framework and a standard operating procedure for Proctoring the Examination | ☐ Yes | ☐ No |

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