



COVENANT UNIVERSITY POLICY ON DIGITAL EXAMINATIONS

119th Senate (S.119/1556) – Thursday, February 18, 2016

In keeping with the vision of Covenant University for global best practices and credible digital examinations, the University shall provide a client-server-based examination environment in the present and in the long-term, leveraging on cloud services.

To this end, Covenant University hereby puts in place a policy to guide digital examinations for certificate, diploma, undergraduate and postgraduate examinations. The guideline shall aim at taking into consideration the identified challenges with digital examinations but shall be revised from time to time as the technologies evolve and become available in Covenant University.

Section A: Types of Digital Examinations

1. Computer-Based Test (CBT): Computer-based test is the administration of an examination using a computer. The test has set time for each module after which the answer sheet would disappear. While the examination is on, the answers reside in the local server where questions were downloaded. On completion of the exercise, the answers are uploaded back to the examining board.

2. Dual-Based Test (DBT): In a Dual-based test, a candidate shall be expected to read the questions on the computer and provide answers on the paper (OMR paper) with pencil.

3. Online Test (OLT): This is same as CBT but the answers reside in an offshore or Covenant University Server. The server presents the questions, receives answers, and grades the answers. Examples are Prometric, Pearson Vue, SAP, Moodle, Blackboard, etc.

4. Computer-Aided Test (CAT): Computer-aided test is a method where the Computer software is used to solve problems only. For example, Engineering Drawing with AutoCAD, Numerical Analysis uses MATLAB, COMSOL etc. The solution is further pushed to a server or mailed to a designated address for assessment.

Section B: Technology Infrastructure

1. A coherent ICT architecture for digital examination mode and examination workflow is necessary. Examination environment demands very high up-time and an extremely reliable network with support for extensive logging of network traffic.

2. Hardware: Computing device must be desktop or laptops. Computing devices must be owned by the University. One person is required to use ONE computing device and there will be NO sharing of computing devices.

3. Software: The Operating System could be Linux/UNIX or Windows-based. For CAT examinations, the Operating System (e.g. Windows) and application software (e.g. MATLAB, COMSOL, AutoCAD) being used shall be fully licensed as NO pirated software shall be used on the University Servers and computing devices. Educational licenses (where allowed by vendor) shall be acceptable. Also, the open source software (e.g. Linux/UNIX operating system) shall be encouraged.

4. Connectivity and Connectivity Test: Computing devices shall be networked and the network shall be physically wired. Wireless connectivity shall not be allowed. For OLT, all connections shall be from secured sources.

The following connectivity tests are recommended:

- a) **Test Connection** - Test if the firewall holds the connection for up to 2 hours.
- b) **Latency Test** - Provides a snapshot of the round trip time it takes in milli-seconds for a packet to travel from the test centre connectivity directly to each hob between the test centre and Covenant University Server's Network.
- c) **Bandwidth Test** - Provides a snapshot reading of the downstream available bandwidth from the Test centre connectivity to Covenant University Server.

5. Security and Anti-virus: Antivirus shall be installed where operating system is susceptible to virus attacks such as Windows. The use of Flash drives or any removable storage shall be prohibited. All document workflow shall be performed through the Client-Server connectivity. Server and clients shall have licensed antivirus software and therefore open-source Linux or UNIX operating system shall be encouraged.

Provision of adequate surveillance facilities such as CCTV, IP cameras shall be provided in the examination rooms.

6. Logistics: As much as possible, the complete examinations shall be done in ONE batch, but where this is not possible, batching shall ensure non-contact between batch members and not more than 30 minutes interval if students are quarantined.

Section C: Question Bank

1. Technology: Questions activation/availability shall be done not more than 3 hours from examination start time. Questions shall be vetted in line with Covenant University examination quality assurance guidelines. Where External Examiner's vetting is required, hardcopy marking scheme shall be presented to the Examiner.

2. Quantity: For objective questions, questions to be answered shall not be less than 20% of total available questions in the Question Bank. To determine time allowed and quantity of questions, the Lecturer shall do mock examination timing. Weighting and

level of difficulty of questions shall be adequately designed as questions presented to students shall be randomly selected.

3. Test Software: The following software packages being engaged could be reviewed from time to time:

- a) Moodle
- b) BlackBoard
- c) Question Mark
- d) Approved CU developed software

Tested open source software is encouraged but shall be approved by the University Examinations Committee.

Section D: Administration of Examinations

1. Authentication: Credentials provided by University Examinations Committee (e.g. Student Matriculation Number as Username and Student Reference as Password) shall be used.

2. Student Identification: Contact or non-contact identification and attendance shall be enforced. Data collected shall include time-in, time-out, facial capture and correlation report with login/logout on the examination platform shall be encouraged. A statistical report shall be generated at the end of the examination session for quality improvement and management.

3. Accessibility to Examinations: This shall be in line with Covenant University ICT Policy on Accessibility. Special arrangement shall be made for physically challenged students.

4. Management of Examinations: At least five (5) Covenant University Faculty/Staff who are proficient in the use and administration of the software shall be engaged. The Lecturer shall be expected to be literate in the use of the software to enable him/her set the examinations without undue external intervention. Examination questions shall be provided and uploaded by the Lecturer and vetted in line with the University standards. Two Faculty/Staff of the Department who are proficient in the use of testing software administrations shall be engaged to facilitate in-house moderation and vetting.

5. Archiving, Backup and Recovery: The archiving and storage of examination results shall be in line with Covenant University ICT Policy on Backup and Recovery.

6. Submission of Examination Questions, Grading and Upload of Results: The examination questions and related marking guides shall be submitted directly to the Covenant University examinations server. The Course Lecturer shall be responsible for the grade presentation and upload accordingly.

7. Infrastructure and Process Sustainability: To ensure sustainable quality and secured examination process, the following shall be made available:

- a) Establishment of a 2000-seater hard-wired Computer Testing Centre.
- b) Training of Faculty and Staff on Testing Software administration and usage.
- c) Ensuring certification of University Software Super Administrator(s).
- d) Licensing of all CAT software as no pirated software shall be allowed.
- e) Provision of surveillance hardware, storage and software.
- f) Enforcement of effective backup and recovery process in line with CU ICT Policy.