



COMMONWEALTH *of* LEARNING



MINISTRY OF HIGHER EDUCATION

Report of the Benchmarking of Technology-Enabled Learning at Universiti Teknologi PETRONAS



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Enabled Learning at Universiti Teknologi
PETRONAS



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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources, and technologies.

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Commonwealth of Learning
4710 Kingsway,
Suite 2500 Burnaby,
British Columbia Canada V5H 4M2
Telephone: +1 604 775 8200
Fax: +1 604 775 8210
Web: www.col.org
Email: info@col.org

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Introduction and Background

Benchmarking is an important tool to compare and make deliberate progress in any field of human endeavour. For integration of technology for teaching and learning, this is relatively a new field. The Commonwealth of Learning (COL) promotes the use of technology-enabled learning (TEL) for improving access to and quality of education and training in the Commonwealth. The approach has been to support policy development, improve institutional capacities to develop blended courses, and strengthen technological infrastructure to leverage the potentials of TEL. The process follows three-phases systematically – (i) Preparation, (ii) Development and (iii) Maturation. Benchmarking is part of phase three, which assumes that the educational institution has taken steps to implement TEL in a systematic manner and is ready to take the next leap to continue the cycle of development. As such, the process of TEL benchmarking focuses on self-study, where relevant stakeholders from the institution participate thereby having active involvement, and the self-study report is validated by external experts and provide guidance and advice, where needed. Therefore, it is as much an internal exercise as an external validation activity.

The Ministry of Higher Education (MoHE), Government of Malaysia recognises the importance of technology-enabled learning in its *Malaysia Education Blueprint 2015-2025 (Higher Education)*, which focuses on global online learning. There is also a national eLearning policy (DePAN 2.0) and a detailed eLearning guidelines for Malaysia Higher Education Institutions (HEIs). Most HEIs follow these policy and guidelines to provide increasing access to quality higher education in Malaysia. Malaysia, as a country has also taken steps in focusing on developing massive open online courses and promote future proof talents based on the needs of the 4th industrial revolution.

In 2021, the MoHE requested COL to support assessing the status of technology-enabled learning in select universities of Malaysia by adopting COL’s TEL Benchmarking Toolkit. Universiti Teknologi PETRONAS (UTP) is one of the six universities identified by the MoHE. The other universities are:

- Universiti Malaya
- Universiti Kebangsaan Malaysia
- Universiti Putra Malaysia
- Universiti Pendidikan Sultan Idris
- Universiti Teknologi Malaysia.

Universiti Teknologi PETRONAS (UTP) is a private university with about 6,500 students in Malaysia and is committed to “... bring changes in education by spreading knowledge through teaching and learning, research, publication, negotiation, and community service in the context of human capital development excellence in the domestic and international level.”

Its vision is “A Leader in Technology Education and Centre for Creativity and Innovation” while its mission states that:

“UTP is an institute of higher learning. We provide opportunities for the pursuit of knowledge and expertise for the advancement of engineering, science, and technology to enhance the nation's competitiveness.”

Our objective is to produce well-rounded graduates who are creative and innovative with the potential to become leaders of industry and the nation.

Our aim is to nurture creativity and innovativeness and expand the frontiers of technology and education for the betterment of society.”

This report presents the findings of the TEL benchmarking carried out at the UTP during November 2021 - March 2022. It provides an overview of the methodology, the validated self-study report and an action plan developed by the UTP team.

Process and Methods

Once UTP agreed to use COL's *TEL Benchmarking Toolkit*¹, COL engaged a consultant to support UTP and validate the self-study report. A brief description of the process followed is given below. It may be noted that in contrast to the advice in the Toolkit to use two experts for the validation process, this report used only one expert engaged by COL. This was due to the travel restrictions during the period and there were no other peer institutions ready to support this process.

UTP nominated 16 staff members to work on the ten domains of the *Toolkit* with representation for both men and women (Annex-A).

The activities during the Benchmarking exercise had five distinct stages:

- A. Setting-up processes and documentation: The Consultant discussed and agreed with the staff of Centre for Academic Excellence (CAAdEx) regarding the protocols of sharing and copying mails. An online storage and collaboration space was created to share the data and reports coming from the 10 domain teams. The consultant also introduced the benchmarking process to the members of the Benchmarking team at UTP, and MOHE representatives through video conference meeting facilitated by COL.
- B. Self-review: This was carried out by the team members and their reports with evidence shared via the online storage and collaboration space.
- C. Validation of self-review: This was carried out by the consultant. In the process, several queries were made to provide additional information and the Consultant moderated the scores, where the evidence provided were not sufficiently justifying the scores or aligned with the rationale.
- D. Action Plan Development: A draft three-year action plan was prepared by the teams, and the consultant interviewed five nominated key stakeholders (Annex-B) to discuss the Action Plan. Feedback was consolidated and provided to the University representative and back-up person by the Consultant. Annex-C presents key strategic actions that are needed to make UTP a strong institution implementing TEL.
- E. Closing and Reporting: The Consultant also presented the findings in a video conference session with the senior management, key team members of the TEL Benchmarking at UTP, and MoHE. The present narrative report is also part of this stage, where the report

¹ <http://oasis.col.org/handle/11599/3217>

has been reviewed by the university concerned before submitted to the MoHE.

Validated Self-Study Report

COL's TEL Benchmarking Toolkit has ten domains to ensure that a base level of quality practices is present. Each of the benchmarking domains contains four to six performance indicators (PIs). Inherent within the PIs is the understanding that an institution may score well in some domains but score low in other domains. This information is then used as a stimulus to improve where needed promoting a cycle of continuous improvements.

The benchmarking domains are:

1. Policy
2. Strategic Plan
3. IT Support
4. Technology Applications
5. Content Development
6. Documentation
7. Organisational Culture
8. Leadership
9. Human Resource Training
10. Technology-Enabled Learning Champions



Figure 1: Ten dimensions of TEL Benchmarking at UTP

Policy**Score: 3.75**

***Description:** The existence of a TEL policy provides direction for the use of technology in learning and teaching. It can be known by other names, such as an eLearning Policy, but its focus is to integrate technology in teaching and learning.*

The TEL policy in the form of a "framework" is available from the initial establishment of Centre for Excellence in Teaching and Learning (CETaL) as the aspiration of the centre is "Advancing Immersive Teaching and Learning in enriching meaningful learning experience for future ready global citizens". However, the details of this framework are available at CETaL only and is not widespread. Efforts are on-going to resurface and revisit the initial intention after the re-branding of CETaL as Centre for Academic Excellence (CAAdEx), developing the roadmap and strategies, hence participation in this COL benchmarking.

The aspiration to nurture future ready global citizens is in line with the UTP mission in providing opportunities for the pursuit of knowledge and producing well-rounded graduates who are creative and innovative with the potential to become leaders of the industry and nation. Variations in teaching approaches that promote soft skills are encourage, and lecturers are encouraged to adopt scholarly approach to teaching and learning.

Management is willing to commit additional support to move towards blended and immersive learning. 46 classrooms have been upgraded as Technology Enhanced Active Learning classrooms with hybrid delivery capability.

Strategic Plan**Score: 4.25**

***Description:** The strategic plan ensures the commitment to TEL is implemented in a time- bound manner.*

The plan has been rolled out, with a gap analysis completed in 2021. A framework for blended and immersive learning is being finalised (during the TEL benchmarking period), while the budget for the learning platform and immersive learning software have been secured for FY2022.

The 5 years strategic plan was deliberated and approved at Executive Management level. The engagement of the Deputy Vice Chancellor (Academic) with academic staff on the 5-year strategic plan includes the transition towards blended and immersive learning.

There are 4 domains of the strategies - Systems and Structures, Content Creation, Professional Development & resources, and Enculturation of Blended and Immersive Learning. All these strategies have its own set of outcomes, and the largest is about content creation. This is where the UTP community will be guided towards a blended learning journey and creating effective learning content using the principles of self-instructional material.

Financial support is available although some level of justification in terms of viable business cases is required, especially if involving subscription to external platforms. However, to date, UTP has a substantial number of classrooms equipped with WIFI connections, video capturing software and interactive boards/TV, which can be used as hybrid, or Technology Assisted Learning.

IT Support**Score: 5**

Description: *The IT support department or a similar department is responsible for a centralised or decentralised approach to providing infrastructure support in UTP.*

Currently the Information Technology & Media Services (ITMS) department maintains all installation, maintenance, and support of technologies for teaching & learning. The policy and governance of ICT is well established.

The Head of the IT department reports to senior management on a monthly basis. The University Information Technology Committee (UITC) meeting occurs bi-monthly. UITC is the IT governance body that is responsible for IT investment and budget planning. The committee reviews and monitors the implementation of IT policies, strategies, guidelines, and framework on a regular basis. The committee is also responsible for deliberating and approving business proposals, as well as ensuring that the proposals align with the organisations vision and philosophy.

The head of the IT support team leads the implementation of digital transformation to support the university business and upgrade & enhance university infrastructure, applications, and processes.

Technology Applications**Score: 5**

Description: *Appropriate technologies are deployed for teaching, learning and assessment as per standard academic practices.*

There is adequate hardware infrastructure for teaching and learning (e.g., access to computers for students and learners). These include 46 Hybrid classrooms, 34 Computer Lab with 1056 PC's, 32 Flip classrooms, virtual desktop infrastructure and laptop for all lecturers.

There is also adequate applications and software available to support teaching, learning and assessment, including learning management system, Microsoft 365, online video conference server and many specialised software.

UTP has a campus wide Wi-Fi with 3Gbps bandwidth and a Local Area Network (LAN) Internet access with 4Gbps bandwidth. Considering the national benchmark for bandwidth, this is considerable. UTP has also adopted and adapted the PETRONAS Data Privacy Act.

Content Development**Score: 3.25**

Description: *Availability of both infrastructure and human resource support for digital content development is crucial for effective TEL implementation.*

The CADEX has technological facilities as well as technological expertise to support the creation of digital multimedia content for teaching and learning. Facilities include a green room for video lecture recording, AR/VR facilities, and 3D printing facilities, customised classroom facilities for active learning (e.g., flipped/TEAL classroom, hybrid/TEAL classroom). A dedicated officer has been assigned to the respective facilities.

In terms of expertise, UTP has one content developer and one instructional designer appointed by CAdEx to support the development of learning materials. In addition, the Teaching and Learning Coordinators of the respective departments are also trained to design, develop, and organise learning content to some extent.

UTP currently adopts three types of online platforms to conduct virtual classes, namely ULearn, ULearnX (based on Moodle) and MS Teams. The UTP library (called Information Research Centre) provides access to Open Educational Resources (OER) and other online resources that both academic staff and students can access. There are also plans to incorporate materials from the MOOCs based platform OpenLearning. This strategy is linked to another initiative on micro credentialing.

Documentation

Score: 3.25

***Description:** There is adequate documentation in the form of guidelines, handouts, and manuals available (online/offline) for use by the stakeholders.*

Guidelines are shared at the start of every semester by the Deputy VC (Academic), ITMS and CAdEx. Hybrid training and MS Teams training are provided for the lecturers by ITMS.

The Centre of Student Development provides orientation to the students to effectively use TEL. There is an online module on preparation for online study during the 0-week, and the students are expected to complete this.

UTP ensures that workflow processes are documented for relevant TEL areas.

Organisation Culture

Score: 3.75

***Description:** The organisational culture supports and fosters innovation, teamwork, learning and sharing to strengthen TEL.*

Faculty members are open to the idea of Community of Practice (COP) and are willing to share their experience in T&L through the COP. Faculty members are further willing to participate in the UTP Teaching and Learning Festival.

Training sessions are regularly conducted with a good level of attendance. These sessions focus on helping lecturers to develop their competencies for online learning, and using technology assisted classrooms.

Several platforms are available for sharing of knowledge creation and sharing across the organisation, namely the Community of Practice (COP), Teaching and Learning Festival (TLIF), and since 2021 UTP also co-organised an International Conference in Advancing & Redesigning Education (ICARE21). Innovations to enable learning with technology are further encouraged through a grant process.

Leadership

Score: 4

***Description:** Leaders in the organisation are enthusiastic about TEL and support an evidence-based approach to decision making in relation to technology adoption.*

Substantial budget allocations are approved to support and invest in online teaching and learning facilities. The office of Deputy VC (Academic) regularly provides directives related to online teaching and learning. A steering committee chaired by the DVCA for the academic program meet every six weeks to monitor the implementation progress of the 5 years strategic plan.

There were various initiatives at UTP to provide allowances to help staff set up home offices during the pandemic. There is a yearly event to award staff related to TEL such as the Scholarship of Teaching & Learning Award, Immersive Teaching & Learning Award and Transformative Teaching & Learning Award. CADEX takes leadership roles to anchor TEL strategic development and initiatives, which are facilitated by a group of coordinators from each department in UTP.

Human Resources Training

Score: 3.83

Description: Human resources are treated as key in delivering quality teaching and learning using technology. Staff training to strengthen the adoption of TEL is a regular feature in UTP's professional development programmes.

Since UTP inception in 1997, lecturers undergo continuous professional development training throughout the year. There is a database of training provided in the university. These were intensified during the COVID19 fully online learning period from Mar 2020 to Dec 2021. All lecturers were also required to complete a compulsory DIY training on using the Moodle platform. This training was modular based and implemented fully online.

CETaL has a yearly training calendar for lecturers to ensure they receive adequate support. CETaL is supported by ITMS, Teaching and Learning Coordinators and Online Learning Coordinators. CETaL also receives continuous advice, support, and guidance from four nationally recognised TEL experts as 'CETaL Advisory Panels'. CETaL reviews the use of technological devices for academic delivery with the aim of providing flexible learning to meet learners' diverse knowledge needs. These include TEL design and delivery, provision of TEL training and CoP Sharing. CETaL regularly conducts training on TEL, digital recordings as well as AR/VR technology.

UTP has allocated six ITMS staff who support the TEL initiatives focussed fully on ULearn, ULearnX and MS Teams. These staff have received ongoing training from technology providers. They provide the relevant training and technical support to teaching staff members on the respective teaching platforms.

TEL Champions

Score: 3.5

Description: The existence of a group of teachers to champion TEL initiatives helps create a supportive environment for the adoption and scaling up of different technologies.

'Early adopters' is considered as academic pioneers with the use of TEL in teaching. All lecturers are early adopters of TEL at UTP. This could be accelerated due to COVID19 as all courses went fully online.

CETaL has appointed TEL Change Agents from Computer & Information Science (CIS) Department. Besides, a number of SoTL research grants were awarded to the TEL projects, and some project innovations were disseminated through national and international platforms.

Teaching and Learning Festival at UTP has been held annually since 2015 and every year TEL submissions are received. TEL Change Agents and academics in UTP who are active as SOTL researchers in the Department of Management and Humanities also conduct and publish research in TEL.

Key Observations from the Report

The overall score of 3.96 on a scale of 5 shows that UTP is well placed to increase the quality of TEL. The TEL benchmarking team at UTP thus has identified several recommendations in the action plan (Annex-A) to make further progress with TEL implementation. There is also strong buy-in to these from the senior management. Some areas that need additional focus are:

- Access to learning materials from external platforms for academic staff
- Strengthen UTP OER by developing appropriate policies and guidelines.
- Implementation of blended learning approach, micro-credentials, and MOOCs.
- Implementation of AR / VR / Virtual lab for teaching and learning
- Develop workflow mechanism for content development using blended and immersive learning, micro-credentials, MOOCs, and AR & VR.

Annex-A: The UTP Benchmarking Team

Associate Professor Dr. Nurhayati Mellor	Senior Director, Centre for Academic Excellence
Dr Veeradasan Perumal	Teaching & Learning Coordinator, Mechanical Engineering Department
Dr Nurul Aini Amran	Teaching & Learning Coordinator, Chemical Engineering Department
Liyana Athirah Jamaludin	Senior Executive, Academic Business Development Unit
Assoc Prof Ir Dr Zahiraniza Mustaffa	Manager, Centre for Excellence in Teaching and Learning
Dr Teh Hee Min	Senior Lecturer, Civil & Environmental Engineering Department
Dr Subarna Sivapalan	Senior Lecturer, Management & Humanities department (ex-manager, Centre for Excellence in Teaching & Learning)
M Faizal Bidin	Executive, Academic Business Development Unit
Arfaishah B M Arih	Manager, ICT Operations & Services, Information Technology & Media Services
Che Azizi bin Che' Rus	Senior Executive, ICT Operations & Services
Nurhannan Bt M Yusof	Senior Executive, ICT Enterprise Application & Dev. Services
Dr Ho Tatt Wei	Program Manager, MSc Electronic Systems Engineering
Ms Marina Kamaruddin	Manager, Academic Operation
Laily Murni Kamarulzaman	Teaching & Learning Coordinator, Centre for Foundation Studies
Nabilla Afzan Hj A Aziz	Teaching & Learning Coordinator, Petroleum Engineering Department
Suhaida binti Azrai	Senior Executive, Quality Management

Annex-B: Interviews conducted by the Consultant

1. Prof. Ts. Dr Mohamed Ibrahim bin Abdul Mutalib, Vice-Chancellor/CEO
2. Prof. Ir Dr Hilmi bin Mukhtar, Deputy Vice-Chancellor, Academic
3. Zurina binti Musa, Senior Director, ITMS

Annex-C: Action Plan

(These are some of the key actions identified by the UTP staff. All figures are estimates only).

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
1. Policy					
a. Enhance the TEL framework for UTP (i.e., Blended & Immersive Learning (BIL) Framework)	Jan 2022	July 2022	CETaL	Start with existing TEL framework, enhance for Blended & Immersive learning (BIL)	Enhanced BIL framework approved by UAC
b. Development of comprehensive guidelines for lecturers covering the aspects of T&L, including, but not limited to: <ul style="list-style-type: none"> i. Course delivery ii. Hybrid learning iii. Blended learning iv. Preparation of Self-instructional materials v. Online learning (ODL, MOOCS, MC) vi. Developing AR / VR content material 	Jan 2022	July 2022	CETaL	Task force lead by CETaL, with T&L Coordinator and Manager, Academic Operation, as members	Comprehensive guidelines published and disseminated to all academic staff as reference
2. Strategic Plan					
c. Digitalisation of T&L at UTP towards blended and immersive T&L approach	Jan 2022	July 2022	CADEX, IRC, ITMS	a. Seamless integration between UCampus, LMS, Knowledge management for UTP OER initiative (monetary)	a. One-stop resource centre for sharing of learning materials allowing lecturers to focus more on learning activities and assessment
	Jan 2022	Dec 2022	CADEX ITMS Finance Acad Dept	b. Seamless integration between LMS and external learning platform provider for MC and certification purposes (technical & monetary)	b. Supporting blended learning initiative and industry / market driven curriculum, as well as possibility of embedding certification as part of academic program
	Jan 2022	Oct 2022	CADEX ITMS	c. Establishment of AR / VR Lab (technical & monetary)	c. Learning resources for students through AR /

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
	Jan 2022	June 2022	Registration & Examination ITMS CADEX	d. Online assessment with Proctoring solution for seamless assessment (monetary)	VR to help learning visualisation of concept (e.g., fluid flow, building construction etc) d. Alternative final assessment approach under control environment through proctoring solution
3. IT Applications					
d. Optimisation and enhancement of LMS platform with Microsoft collaboration tools. Note: on-going project under ITMS includes – archiving in LMS, Microsoft ETF, both supporting digitalisation T&L	Jan 2022	Sept 2022	ITMS	ITMS Part of on-going project under digitalisation of T&L (technical & monetary)	Enriching user experience using the platform and ensuring high availability of application by Academic & Students
4. Technology Applications					
e. Upgrading of current Technology Assisted Active Learning (TEAL) Classroom for hybrid learning capabilities	Jan 2022	Dec 2024	Academic Operation, ITMS, Project Management & Maintenance Dept	Audio/video (AV) facility enhancement to support hybrid learning in TEAL classrooms (Technical & monetary) Will do in phases over 3 years	Completion of the project and operationalised timely in supporting hybrid learning.
f. Trainings on specific IT applications for T&L e.g., H5P trainings for LMS, using proctoring for examination, using hybrid classrooms, using apps / tools under MS Teams for T&L (Note: trainings can be in the form of DIY / curated video)	Jan 2022	Dec 2025	CETaL, ITMS	Identify new tools / apps, or gaps, and address gaps through training. Regular meeting between CETaL and ITMS for T&L application discussion (technical)	MS Teams (classroom setup) optimised and comprehensively used for T&L activities
5. Content Development					
g. Access to learning materials from external platform for academic staff	Jan 2022	Dec 2022	CETaL ITMS	Subscription to external learning platform (technical & monetary)	One external learning platform subscription for all academic staff, accessible

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
					also to students
h. Establishment of UTP OER as sharing platform of learning materials	March 2022	July 2022	CETaL, IRC, ITMS	Integration of current LMS platform with UTP OER platform (part of knowledge management initiative in IRC) (technical & monetary)	Selected learning materials on LMS are automatically transferred to the UTP OER platform, accessible to all academic lecturers
i. Implementation of blended learning approach (Total 10 phases, new subjects by semester, proposed by department)	Jan 2022	Dec 2025	CETaL Acad Operation All acad dept	CETaL & IT - ULearn as LMS CETaL – quality audit on learning materials on ULearn Deans & Chair – drive the implementation at faculty / department level. Acad Operation – Monitor overall roll-out at university level as per implementation plan (through teaching load planning)	All T&L Coordinator trained as resource person for blended learning at department by April 2022 By end of 2022, 6 courses per dept will implement blended learning By end of 2023, 12 courses per dept will implement blended learning By end of 2024, 18 courses per dept will implement blended learning
j. Implementation of Micro-credentials and MOOCs Note: 1. 2 subjects offered as MOOCs to GLU partners (intro to oil & gas, HSE) using in-house LMS platform. Moving this to external platform will have the potential of attracting more students 2. MC will start from selected topics in MSc ODL program, or professional development courses by department	July 2022	Dec 2025	CETaL Academic Department, Finance, ITMS, Registry	SIM materials (ODL program) Dean – drive the implementation of MOOCs and MC at faculty level External Learning platform for MOOCs & MC with seamless integration to current UCampus system	Each MSc ODL to offer at least 1 MC module related to the program Each faculty to offer minimum 2 professional development course as MC
k. Implementation of AR / VR / Virtual lab for T&L	Jan 2022	Dec 2025	CETaL	CETaL instructional designer Current CETaL VR / AR facilities	TLIF 2022 showcase the AR / VR lab as part of UTP 25 th Year anniversary in 2022

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
				Additional manpower through allocation for Job on Campus, and internship students	1 comprehensive AR / VR module to support learning activities for Faculty of Engineering by 2024 1 comprehensive AR / VR module to support learning activities for Faculty of Science & Information Technology by 2025
6. Documentation					
l. Workflow process for Blended & Immersive Learning, MOOCs, MC, AR & VR	Jan 2022	July 2022	CETaL	CETaL Admin / Online learning unit	Workflow process documented as part of Guidelines for lecturers (existing)
m. Establishment of UTP OER as means of sharing resources among UTP academics	Jan 2022	July 2022	CETaL	CETaL / IRC	UTP OER as part of materials under Knowledge Management project of IRC
7. Organisational Culture					
n. Enhancement of Community of practice (COP) <ul style="list-style-type: none"> - COP planned with specific themes at regular intervals - Sharing of COP is open to external institution as well (local IHL, international IHL) 	Jan 2022	Dec 2023	CETaL	CETaL Team	Minimum 1 COP per month addressing the current needs of UTP and current trend in higher education
o. Teaching and Learning Festival as platform to showcase the good practices among UTP academics (annual event)	Jan 2022	Dec 2025	CETaL	CETaL, Academic Operation Academic Department	1 TLIF conducted every year with participation open to UTP academic staff, and national as well as international participants
8. Leadership					
NA					

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
9. Human Resource Training					
p. Trainings on Self-Instructional Materials (SIM) (continuous training)	Jan 2022	Dec 2025	CETaL	Training session with external trainers & develop in-house expertise (2022/2023) (monetary) In-house trainings for lecturers (2024/2025) (monetary) CETaL ULearn module	All lecturers trained on SIM by 2025 1 CETaL staff trained as expert in SIM 1 trainer / change agent per department for SIM
q. Enhancement of academic training matrix	Jan 2022	July 2022	CETaL	T&L Coordinator (task force) CETaL Training Unit	Academic training matrix approved by University Academic Committee
r. Self-learn materials on using relevant tools for teaching and learning	Jan 2022	Dec 2025	CETaL	In-house experts in tools Curation by CETaL staff – youtube, canva, powtoon – easy illustration of using relevant tools for T&L CAdEx website CETaL ULearn module	One sharing per month (self-learn approach) on using relevant tools for T&L e.g., kahoot, padlet, mindmap, whiteboard, or any collaborative learning tools)
10. TEL Champions					
s. T&L Coordinator as change agent to T&L related initiative Note: Trainings by identified external trainer Focus for 2022 - Preparation of Self-Instructional materials - Using blended learning approach for teaching - Compilation of COP based on technology know how for byte size learning for academic staff	Jan 2022	Dec 2025	CETaL	Training modules	T&L coordinator trained as changed agent for blended & immersive learning



4710 Kingsway,
Suite 2500 Burnaby,
BC V5H 4M2 Canada
Tel: +1 604 775 8200
Fax: +1 604 775 8210
E-mail: info@col.org
Web: www.col.org

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