

## **Case 1**

### **Task 2**

The weighted scoring model includes 7 criteria. First, supporting key business objectives is the most important criterion and it weighs 25%. This is because all the projects aim at serving OEU's strategic goals (expanding student base and providing improved education products). Second, providing positive net present value (NPV) and return on investment (ROI) has a weight at 20%. This is the second most important criterion because a high NPV indicates high profit, and a high ROI indicates high efficiency of an investment. The ability to generate profit is crucial for OEU's business growth, and high profit implies a success in expanding student base as the profit mainly comes from students' tuition fees. Third, it is desirable for a project to have low risk in meeting the goals of triple constraints (scope, time, and cost). Although it does not directly support OEU's business strategies, meeting these goals is vital for a successful project and low risk means a high possibility of completing the project within budget and on time. Thus, this criterion has a weight of 15% in the model. Fourth, having low cost weighs 10% because low project cost will lead to low tuition fees, which can attract more students and make OEU more competitive. Fifth, providing high-quality education products weighs 15%, which ranks the third because this feature helps to maintain student satisfaction and enables OEU to establish its reputation. It further attracts more students and continuously facilitates OEU's business growth. Sixth, considering future development, the project needs to require minimal maintenance and support future upgrade. This weighs 5% as it is a preferable but non-essential feature. It supports OEU's business goals by reducing maintenance cost and enabling continuous product improvement. Seventh, having high competitiveness involves providing unique education products in areas with less competition. This criterion weighs 10% because high competitiveness facilitates the expansion of customer (student) base. Although it is not as important as high-quality products, having less competitors and standing out from competitors is an indispensable criterion that needs to be considered when evaluating the projects.

By analysing the features and financial performance (as shown in Appendix A) of each project, the scores are given based on the seven criteria discussed above. From Figure 1 (as shown below), it is obvious that Project 1 is the best based on the weighted scoring model, and its score (81) is much higher than the other three projects (around 55). This project performs best in the two most important aspects (supporting key business objectives as well as providing positive NPV and ROI). In addition, it achieves high scores (above 70) from criterion C to criterion F because it maintains relatively high teaching quality by ensuring interactivity of classes while lowering cost and risk by running classes inside local community buildings. Although it only achieves average score (60) in having high competitiveness, it is an overall desirable project to serve OEU's strategic goals. By contrast, Project 2 is advantageous in terms of low cost as well as easy maintenance and future upgrade, but its disadvantage is distinct in terms of compromised product quality and low competitiveness due to the nature of online courses. For Project 3 and Project 4, they provide the highest quality of teaching as classes are delivered in physical campuses, but they require much more investment (\$50 million and \$5.4 million respectively) due to the nature of physical campuses. Project 3 provides specialised degrees in communities where the need has not been met, which means there is minimal competition. Project 4 is also competitive due to OEU's reputation. However, building and upgrading physical campuses requires enormous cost, and it also has high risk in terms of triple constraints as it may require more time and money than expected. Although the NPVs of Project 3 and Project 4 are much higher, the ROIs are relatively low, indicating inefficient investment. In addition, physical campuses require more maintenance and can be relatively difficult for future upgrade. Therefore, it is recommended that Project 1 should be chosen in order to facilitate OEU's continuous growth.

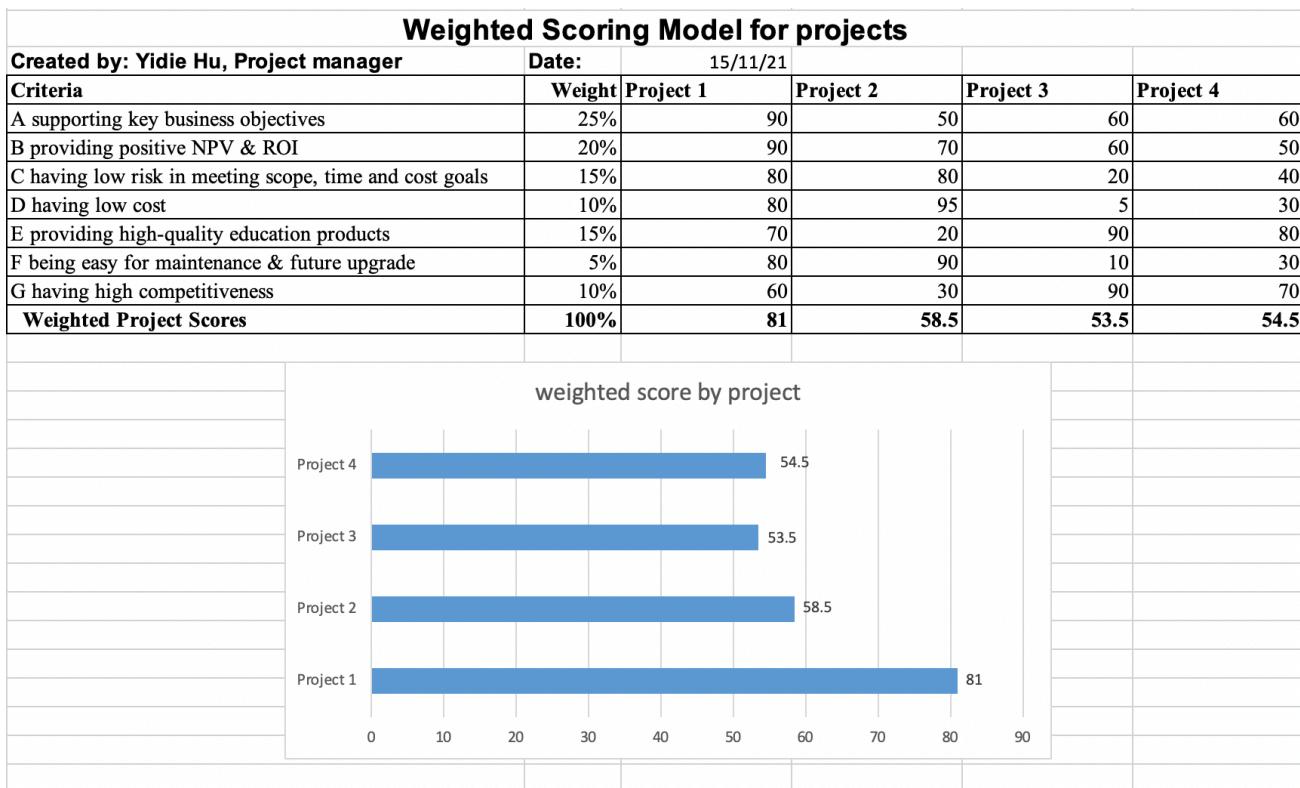


Figure 1. Weighted scoring model for 4 projects

	project 1	project 2	project 3	project 4
<b>discounted cost</b>	\$ 632,195.73	\$ 246,251.79	\$ 45,312,946.66	\$ 4,931,294.67
<b>NPV</b>	\$ 551,268.12	\$ 168,264.03	\$ 28,415,904.20	\$ 2,517,341.62
<b>ROI</b>	87.20%	68.33%	62.71%	51.05%
<b>payback period</b>	in year 2	in year 2	in year 2	in year 2

Figure 2. Comparison of financial analysis among 4 projects (see calculations in Appendix A)

### **Task 3**

## **Business Case for Hybrid Campus**

**Date: 15/11/2021**

**Prepared by: Yidie Hu, Project Manager**

### **1.0 Introduction/ Background**

The core business goal of Open Education University (OEU) is to provide various degree programmes in various countries. Considering the slow growth at its campuses, OEU management team decides to change its strategy to support continuous growth. The strategic goals focus more on expanding customer base of students and improving education products with technology.

### **2.0 Business Objective**

OEU's strategic goals include expanding the current customer base, providing a unique education product, improving cooperation between campuses and utilising technology for competitive advantage. The hybrid campus project will support these goals by establishing a central hub with studios to broadcast classes to many study centres via video conferencing, which enables economy of scale and lowers tuition fees. With study centres linked to a lecture, up to 500 students can attend the same lecture from different locations. This feature supports expanded customer base and also ensures cooperation between campuses in terms of product offerings, sharing of resources, knowledge and research. The lectures still maintain interactivity, thus achieving higher quality than other online courses. The internal costs will be reduced by lower rent cost (by establishing study centres in local community buildings) and no additional costs for developing course materials (by using the same materials as other campuses), which enables OEU to lower tuition fees to attract more students.

### **3.0 Current Situation and Problem/Opportunity Statement**

OEU has 20 campuses in North America, Australia and Europe, and it has over 9000 full-time employees and 3500 freelance workers. The problem is that OEU is experiencing slowed growth at its campuses. However, due to rapid growth and development of information technology worldwide, the solution can be that online courses and physical classes are combined when improving the growth at its campuses. Building new physical campuses and upgrading current campuses can also provide opportunities to grow its campuses and meet OEU's strategic goals.

### **4.0 Critical Assumption and Constraints**

The proposed hybrid campuses must be valuable assets for OEU. Current employees, clients (students) and local communities must actively support the project, and this new mode of teaching must operate under a framework of government laws and regulations. The project manager must lead the effort, and the project team must include participants from several parts of the university as well as from local communities where study centres will be built. The video conferencing technology for delivering lectures should be stable and require minimal technical support. The online assignment submission system should be easily accessible, reliable and user-friendly to both students and lecturers.

### **5.0 Analysis of Option and Recommendation**

There are four options for addressing this problem (slowed campus growth):

1. Create a hybrid university which will contain a central hub with studios to broadcast classes via video conferencing technology to many study centres located in local communities.
2. Create completely online courses to deliver complete degrees.
3. Create new physical campuses to provide specialised degrees in the areas where higher education demand is not met.
4. Upgrade current campuses in terms of capacity and technology.

Based on discussions with stakeholders, we believe that option 1 is the best.

## **6.0 Preliminary Project Requirements**

The main features of the hybrid campus project include the following:

1. A studio to broadcast classes to different study centres with video conferencing technology.
2. Two-way video conferencing class in each study centre. The lecturer must be able to see all students in all classes and students must be able to ask questions.
3. Each lecture linked to up to ten study centres in order to hold up to 500 students per lecture.
4. Physical classes for students to attend in study centres, with a centre manager responsible for discipline and administrative duties.
5. Physical tests and exams at study centres, which will be scanned and sent to lecturers for marking.
6. Online system for submitting assignments.
7. The accessibility of course materials used at other campuses. Students at hybrid campuses should use the same materials as at other campuses, which ensures cooperation between campuses.

## **7.0 Budget Estimate and Financial Analysis**

A preliminary estimate of costs for the entire project is \$700,000. First, establishing a studio will cost \$400,000, and it is assumed that there are no building costs for the studio. Second, all 10 study centres will be established in buildings belonging to local communities and they need to be equipped, at a cost of \$30,000 each. Thus, equipping 10 study centres will cost \$300,000 in total. As for the costs for developing course materials, this project will not involve any additional costs in this aspect.

An estimate of projected benefits is \$1,450,000 and it is based on the assumption that there will be increase in profits due to an expanded customer base of students as economy of scale will be enabled (up to 500 students per lecture). With the improved education products supported by improved technologies, the business will gain increased profits. The projected benefit of the first year is \$200,000, which increases to \$500,000 in the second year and \$750,000 in the third year. Exhibit A summarises the estimated costs and benefits in each year and in total. It also shows the estimated net present value (NPV), return on investment (ROI) and the year when payback occurs. The assumptions made in performing this financial analysis are provided as well. All financial estimates indicate this project is good. The NPV is \$551,268.12 and the discounted ROI based on a three-year system life is high at 87.20%. The estimated payback is relatively short (within two years).

## 8.0 Schedule Estimate

The sponsor (OEU's CEO) expects that most parts of the project will be completed and new students will study in the hybrid campuses within a year, but there is some flexibility in the schedule. We also assume that the new hybrid campuses will have a useful life of at least three years.

## 9.0 Potential Risks

This project has several risks. First, the foremost risk is a lack of interest in hybrid campuses by internal lecturers and external students. Students' interest is crucial for expanding current student base and realising the potential benefits. Second, there are some technical risks in choosing videoconferencing software platforms, configuring equipment and deploying the videoconferencing system. Third, there is a main business risk that the estimated benefits are not realised but a lot of time and money has been invested into the project.

## 10.0 Exhibits

### Exhibit A: Financial Analysis

Discount rate	9%				
	Year				
	0	1	2	3	Total
costs	200,000.00	260,000.00	120,000.00	120,000.00	700,000.00
discounted factor	1	0.92	0.84	0.77	
discounted costs	200,000.00	238,532.11	101,001.60	92,662.02	632,195.73
benefits	-	200,000.00	500,000.00	750,000.00	1,450,000.00
discounted factor	1	0.92	0.84	0.77	
discounted benefits	-	183,486.24	420,840.00	579,137.61	1,183,463.85
discounted cash flow	(200,000.00)	(55,045.87)	319,838.40	486,475.59	551,268.12
cumulative disc cash flow	(200,000.00)	(255,045.87)	64,792.53	<b>551,268.12</b>	
<b>NPV</b>	<b>551,268.12</b>				
<b>discounted life cycle ROI</b>	<b>87.20%</b>				
<b>payback</b>	<b>in Year 2</b>				
Assumptions					
Costs					
establishing a studio	400,000.00				
equipping study centres (quantity 10, 30,000/each)	300,000.00				
Total project costs	700,000.00				
Benefits					
Total project benefits	1,450,000.00				

## Task 4

# Project Charter

**Project Title:** Hybrid Campus (Phase 1) Project

**Project Start Date:** November 15, 2021

**Projected Finish Date:** November 15, 2022

**Budget Information:** The directors of OEU have approved to allocate \$700,000 for the Hybrid Campus project, and phase 1 will be allocated \$460,000 in total, including establishing a studio (\$400,000) and equipping 2 study centres (\$30,000 \* 2 = \$60,000).

**Project Manager:** Yidie Hu, 0410341536, yidiehu@oeu.com

**Project Objectives:** Hybrid Campus (Phase 1) aims at establishing a studio in Virginia, USA and equipping two study centres in Prato, Italy and Melbourne, Australia respectively. These objectives are expected to be completed within one year.

**Main Project Success Criteria:** The studio and study centres must meet all written specifications, and most importantly they must provide high-quality courses via video conferencing. The studio and study centres be completed on time (within one year) and within budget (within \$460,000). The project must be able to attract more students sustainably. The CEO will formally approve the project with advice from other key stakeholders.

### Approach:

- Negotiate with local communities in Plato and Melbourne regarding leasing buildings within one month.
- Within two months, develop a clear work breakdown structure, scope statement, and Gantt chart detailing the work required to complete the Hybrid Campus (phase 1) project.
- Purchase all required equipment (e.g. video screens, cameras and microphones) within three months.
- Outsource studio establishment from local companies in Virginia.
- Outsource equipment installation from local companies in Prato and Melbourne respectively.
- Hold weekly progress review meetings involving the core project team and the sponsor.
- Conduct thorough video conference testing per the approved test plans.

### Roles and Responsibilities

Role	Name	Organization/ Position	Contact Information
Sponsor	David Ellis	OEU/CEO	davidellis@oeu.com
Project Manager	Yidie Hu	OEU/Manager	yidiehu@oeu.com
Team member	Will Wang	OEU/Technical expert	willwang@oeu.com
Team member	Alice Brown	OEU/Teaching manager	alicebrown@oeu.com

Team member	Jim Clerk	OEU/ Prato supervisor	jimclerk@oeu.com
Team member	Ben Scott	OEU/Melbourne supervisor	benscott@oeu.com

**Sign-off:** (Signatures of all above stakeholders. Can sign by their names in table above.)

*David Ellis* *Alice Brown*

*Yidie Hu* *Jim Clerk*

*Will Wang* *Ben Scott*

**Comments:** (Handwritten or typed comments from above stakeholders, if applicable)

*"This project is crucial to our university's growth. I will be heavily involved in it, and I expect we work together to make it succeed." — David Ellis*

*"If anyone has any technical issues, please do not hesitate to contact me." — Will Wang*

## Case 2

### Task 1

# Scope Statement (Version 1)

<b>Project Title:</b> Hybrid Campus <b>Date:</b> 19/11/2021 <b>Prepared by:</b> Yidie Hu, project manager
<b>Project Purpose and Justification:</b> OEU aims at providing education products to students in a variety of countries and it wants to remain competitive in the current situation where there are an increasing number of qualifications offered worldwide. The purpose of hybrid campus project is to serve the OEU's strategic goals of expanding the current customer base and lowering cost through the use of technology. This project makes education accessible to more students, and it is expected to be self-funded since year 2 and generate \$500,000 revenue each year from year 3 to year 5 due to more enrolled students. This project will also achieve the business objective of reduced cost because it has lower rent cost, and it uses human resources at current campuses.
<b>Product Characteristics and Requirements:</b> <ol style="list-style-type: none"><li>1. Distributed study centres: Study centres should be established in the areas with high demand of OEU's qualifications and minimal competition.</li><li>2. Videoconferencing venue: The videoconferencing venue in each study centre should hold 50 students. The venue should be equipped with two large television screens, a camera, speakers and a microphone.</li><li>3. Broadband access to the Internet: The study centres should have broadband Internet access to support videoconferencing classes and laptops.</li><li>4. A computer with a document scanner: The computer with scanner is required for students to scan their tests and exams or other course materials.</li><li>5. Equipment and software for presentation and videoconferencing: Each studio needs a camera, computer, necessary software and two television screens. These enable the lecturer in the studio to see the live forage of all participating study centres.</li><li>6. Interactivity: Students in the study centres should be able to interact with the lecturer in the studio.</li><li>7. Student management/support system: The system should be developed for support and assessments.</li></ol>
<b>Boundaries</b> This project includes all work associated with planning, designing and establishing the hybrid campuses (a studio and 10 study centres only). This includes requirements gathering, site selection, system development, equipment configuration, testing, training and rollout. All the activities should only support the business objectives and product features required by OEU's top management. All further activities after year 3 such as ongoing maintenance and upgrade are out of the scope. All teaching activities such as delivering classes, developing teaching materials and class management are out of the scope.
<b>Summary of Project Deliverables</b> 1. Project management-related deliverables:

**1.1. Business case:**

The business case analyses the benefits and risks of hybrid campus project, and it provides justification for undertaking this project.

**1.2. Project charter:**

The project charter formally recognises the existence of hybrid campus project and provides direction on the project's objectives and management.

**1.3. Team contract:**

The team contract enables the project team to work together following the ground rules.

**1.4. Scope statement:**

The scope statement outlines the project's features and deliverables, clarifying the work to be done on time and within budget.

**1.5. Work breakdown structure (WBS):**

The WBS break the project down into smaller components, thus enhancing efficiency.

**1.6. Schedule/ Gantt chart:**

The Gantt chart displays project activities with their start and finish dates in a calendar format.

**1.7. Cost baseline**

The cost baseline clarifies the approved budget for the hybrid campus project.

**1.8. Status reports:**

The status reports summarise the project's progress and keep the stakeholders informed.

**1.9. Final project presentation:**

The final presentation shows the project outcomes to the stakeholders.

**1.10. Final project report:**

The final project report gives the project an official conclusion and evaluates the performance of the project.

**1.11. Lessons learned report:**

The lessons learned report reflects on the positive and negative experiences of the project, which helps future projects follow the good practice and avoid the mistakes.

**2. Product-related deliverables:**

**2.1. Accreditation from local education authorities:**

The hybrid campuses and related degrees need to be accredited by local education authorities.

**2.2. Site investigation report:**

Investigation should be conducted to find the sites suitable for establishing hybrid campuses where there is high demand for OEU's qualifications with minimal competition.

**2.3. Lease contract with local communities:**

Rent needs to be negotiated with local communities and lease contract needs to be signed on agreement.

**2.4. IT and Internet infrastructure:**

IT and Internet infrastructure is essential for the central hub with studios as well as study centres. As study centres are in different countries, compatibility issues must be addressed.

**2.5. Videoconferencing system:**

The video conferencing system is the core part of the hybrid campus project, which connects the studio with study centres and delivers two-way lectures.

**2.6. Videoconferencing equipment:**

Each study centre needs videoconferencing equipment including two large television screens, a camera, speakers and a microphone.

**2.7. Student learning management system:**

Students will use the learning management system for all the in-semester assessment, which should minimise lecturers' work while maintaining the high quality of assessments.

This system is designed based on the current system, but modifications are needed to adapt it for hybrid campuses.

**2.8. OEU website design:**

OEU website needs to design a section for hybrid campuses, including application, registration and enrolment.

**2.9. Student assessment policy and procedures document:**

This document needs to be developed in order to regulate the student assessment processes and ensure the quality of the assessments.

**2.10. Technical testing plan:**

The technical testing plan will document how the videoconferencing system and student learning management system will be tested, who will do the testing and how issues will be reported, etc.

**2.11. Quality check report:**

The quality check report will document how the teaching quality will be evaluated, who will do the check, how well the videoconferencing classes perform and what can be improved, etc.

**2.12. Training plans:**

Training should be provided to lecturers regarding how to use the student learning management system. In addition, training on videoconferencing system will be provided to centre managers.

**Project Success/Acceptance Criteria:**

1. The project is completed within three years.
2. The project is completed within \$900,000 budget.
3. The project achieves all deliverables within agreed scope.
4. The project achieves the business objectives and strategic goals of the business.
5. The project can be self-funded after one year and generate expected revenue.
6. The stakeholders especially the sponsor and customers (students) are satisfied with the project.
7. The project meets both functional and non-functional requirements.

If the project exceeds the budget and time to a limited extent, it is still considered as a success if it expands the customer base and promote OEU's competitiveness and future development.

## Task 2

REQUIREMENTS TRACEABILITY MATRIX					
Project Name:	Hybrid Campus		Category	Source	Status
Project Manager Name:	Yidie Hu				
Project Description:	The hybrid campus project's purpose is to serve the OEU's strategic goals of expanding the current customer base and lowering cost through the use of technology. This project includes establishing hybrid campuses (a studio and 10 study centres) in local communities, and the classes are delivered via videoconferencing technology. This project is expected to be completed within 3 years and within \$900,000 budget.				
ID	Requirements (Functional or Non-Functional)	Assumption(s) and/or Customer Need(s)	Category	Source	Status
001	Distributed study centres (Functional)	The study centres are located in the communities where there are high demands for OEU's qualifications but little competition exists.	Functional requirement	project charter, scope management plan & requirements management plan	Not Started
002	Videoconferencing venue (Functional)	Each study centre has one videoconferencing venue that can contain 50 seats for students to have classes. Each venue contains two large television screens, a camera, speakers and a microphone.	Functional requirement	project charter, scope management plan & requirements management plan	Not Started
003	Studio (Functional)	The studio is where the lecturer broadcasts classes. It should be equipped with a camera, computer, presentation and videoconferencing software as well as two television screens.	Functional requirement	project charter, scope management plan & requirements management plan	Not Started
004	Broadband access to Internet (Non-Functional)	The Internet infrastructure is crucial for videoconferencing classes and other learning activities. Thus, compatibility issues need to be addressed.	Performance requirement	project charter, scope management plan & requirements management plan	In Process
005	Accreditation from local education authorities (Non-Functional)	The campuses and courses offered need to be accredited at local education authorities.	Quality requirement	accreditation requirements from education authorities	Completed

006	Videoconferencing system (Functional)	Videoconferencing system ensures the interactivity of classes. Students can ask questions and interact with the lecturer and the lecturer can see live footage of every study centre.	Functional requirement	project charter, scope management plan & requirements management plan	Not Started
007	Videoconferencing system training (Non-functional)	Videoconferencing system training needs to be provided to centre managers as they may not have experience in technology.	Training requirement	scope management plan, requirements management plan & training plan	Not Started
008	Student learning management system (Non-Functional)	This system is used for all in-semester assessments and it should minimise work for lecturers while the quality of assessments is maintained.	Service requirement	project charter, scope management plan & requirements management plan	Not Started
009	Training on student learning management system (Non-Functional)	Student learning management system should be adapted for distant students in hybrid campuses, so training should be provided for lecturers.	Training requirement	scope management plan, requirements management plan & training plan	Not Started
010	Assessment policy and procedures document (Non-Functional)	This document needs to be developed in order to regulate the student assessment processes and ensure the quality of the assessments.	Quality requirement	assessment specifications from teaching department	Not Started
011	Computer & document scanner (Non-Functional)	Students will use the computer and document scanner to scan their exam papers, which will be processed at head office and marked electronically by lecturers.	Service requirement	project charter, scope management plan & requirements management plan	Not Started
012	OEU's website (Non-Functional)	OEU's university website should be modified and include application, registration and enrolment for hybrid campuses.	Service requirement	project charter, scope management plan & requirements management plan	Not Started
013	Systems testing (Non-Functional)	Videoconferencing system and student learning management system need to be tested to ensure high quality.	Quality requirement	testing specifications from technical department	Not Started

## Case 3

### Task 1

Task Name
<b>1 Concept</b>
<b>1.1 Define requirements</b>
1.1.1 Define accreditation requirements
1.1.2 Define user requirements
1.1.3 Define system requirements
1.1.4 Define content requirements
1.1.5 Define quality requirements
<b>1.2 Define specific functionality &amp; characteristics</b>
1.2.1 Define study centre functionality & characteristics
1.2.2 Define studio functionality & characteristics
<b>1.3 Project management</b>
1.3.1 Brief project team
1.3.2 Develop project plan
1.3.3 Define risk and risk management approach
<b>2 Design</b>
<b>2.1 System design</b>
2.1.1 Videoconferencing system design
2.1.2 Student learning management system design
2.1.3 OEU website design
2.1.4 Assessment system design
<b>2.2 Studio design</b>
2.2.1 Studio blueprint
2.2.2 Design hardware installation location
2.2.3 IT infrastructure design
<b>2.3 Study centre design</b>
2.3.1 Study centre blueprint
2.3.2 Network location design
2.3.3 IT infrastructure design
<b>3 Development</b>
<b>3.1 System development</b>
3.1.1 Videoconferencing system development
3.1.2 Student learning management system development
3.1.3 OEU website modifications
3.1.4 Develop assessment policy and procedures document
<b>3.2 Studio development</b>
3.2.1 Equipment purchase
3.2.2 Equipment installation
3.2.3 IT infrastructure installation
<b>3.3 Study centre 1&amp;2 development</b>
3.3.1 Lease contract agreement with local community

3.3.2 Equipment purchase
3.3.3 Equipment installation
3.3.4 IT infrastructure installation
<b>3.4 Study centre 3&amp;4 development</b>
3.4.1 Lease contract agreement with local community
3.4.2 Equipment purchase
3.4.3 Equipment installation
3.4.4 IT infrastructure installation
<b>3.5 Study centre 5&amp;6 development</b>
3.5.1 Lease contract agreement with local community
3.5.2 Equipment purchase
3.5.3 Equipment installation
3.5.4 IT infrastructure installation
<b>3.6 Study centre 7&amp;8 development</b>
3.6.1 Lease contract agreement with local community
3.6.2 Equipment purchase
3.6.3 Equipment installation
3.6.4 IT infrastructure installation
<b>3.7 Study centre 9&amp;10 development</b>
3.7.1 Lease contract agreement with local community
3.7.2 Equipment purchase
3.7.3 Equipment installation
3.7.4 IT infrastructure installation
<b>4 Testing</b>
<b>4.1 System testing</b>
4.1.1 Videoconferencing system testing
4.1.2 Student learning management system testing
<b>4.2 Studio testing</b>
4.2.1 Equipment testing
4.2.2 Internet testing
4.2.3 Videoconferencing testing
<b>4.3 Study centre 1&amp;2 testing</b>
4.3.1 Equipment testing
4.3.2 Internet testing
4.3.3 Videoconferencing testing
<b>4.4 Study centre 3&amp;4 testing</b>
4.4.1 Equipment testing
4.4.2 Internet testing
4.4.3 Videoconferencing testing
<b>4.5 Study centre 5&amp;6 testing</b>
4.5.1 Equipment testing
4.5.2 Internet testing
4.5.3 Videoconferencing testing
<b>4.6 Study centre 7&amp;8 testing</b>
4.6.1 Equipment testing

4.6.2 Internet testing
4.6.3 Videoconferencing testing
<b>4.7 Study centre 9&amp;10 testing</b>
4.7.1 Equipment testing
4.7.2 Internet testing
4.7.3 Videoconferencing testing
<b>5 Training</b>
<b>  5.1 Videoconferencing system training</b>
5.1.1 Videoconferencing system training plan
5.1.2 Videoconferencing system training implementation
5.1.3 Videoconferencing system training documentation
<b>  5.2 Student learning management system training</b>
5.2.1 Student learning management system training plan
5.2.2 Student learning management system training implementation
5.2.3 Student learning management system training document
<b>6 Rollout</b>
<b>  6.1 Website content editing</b>
6.1.1 OEU website editing
6.1.2 OEU social media editing
<b>  6.2 Study centre 1&amp;2 rollout</b>
6.2.1 Overall evaluation
6.2.2 Marketing
<b>  6.3 Study centre 3&amp;4 rollout</b>
6.3.1 Overall evaluation
6.3.2 Marketing
<b>  6.4 Study centre 5&amp;6 rollout</b>
6.4.1 Overall evaluation
6.4.2 Marketing
<b>  6.5 Study centre 7&amp;8 rollout</b>
6.5.1 Overall evaluation
6.5.2 Marketing
<b>  6.6 Study centre 9&amp;10 rollout</b>
6.6.1 Overall evaluation
6.6.2 Marketing
<b>7 Closing</b>
7.1 Final project report
7.2 Final project presentation
7.3 Lessons learned report

**Task 2**

1. Completion of defining requirements & product characteristics
2. Completion of project plan
3. Completion of design (study centre, studio, system & IT)
4. Completion of system & IT development
5. Completion of studio development
6. Completion of study centre development
7. Completion of testing
8. Completion of training
9. Completion of study centre rollout

## **Task 3**

### **Task 3.3 explanation**

#### **1. Concept**

This part includes defining requirements, defining specific functionality and characteristics, and project management. All the activities in this section are completed by the project manager, Yidie Hu and she will spend 2 weeks in gathering requirements from the sponsor, users and other related stakeholders. Then she will define the specific functionality and characteristics based on the requirements, which takes another 2 weeks. Also, for these two activities, Glenda Brown (registrar) will be consulted frequently regarding regulations and accreditation issues. In month 2, Yidie Hu (project manager) will start project management activities which take 1 month. By the end of month 2, the initialising phase will be completed and a project team will form successfully.

#### **2. Design**

After project management has been completed in month 2, the design starts at the beginning of month 3. System design, studio design and study centre design start simultaneously. System design takes about a month as the systems are critical for this project and it is sophisticated considering the nature of software. Stephanie Gerald (videoconferencing specialist), Vanessa Smart (system analyst), Rodney Gordon (system analyst), and John Smith (learning management system expert) will participate in this activity. In addition, Aneshree Naik (educational expert) will participate in designing the assessment system. Studio design and study centre design both take about 2 weeks as they focus more on the equipment plan, and it is assumed that Lew Stone (network specialist) and Stephanie Gerald (videoconferencing specialist) will collaborate on these two designs.

#### **3. Development**

The team members in charge of the design are responsible for the corresponding development work. For the system development, it can start as soon as the system design has been completed, and the duration is estimated at 7 months. For the studio development, it can start as soon as the studio design has been completed. However, the development of the first 2 study centres can only start after both study centre design and studio development have been completed because Lew Stone (network specialist) and Stephanie Gerald (videoconferencing specialist) are in charge of both the studio and study centres, and the plan is that they complete studio first and then work on study centres. The studio development takes about 3.5 months and then the development of the first two study centres begins together and finishes in 5 months. For the other 8 study centres, the plan is similar and every two study centres begins after the previous two study centres are completed. It is estimated to take 5.5 months to complete two study centres together.

#### **4. Testing**

After each level 3 development task is completed, the corresponding testing can be conducted by the corresponding development staff. It is estimated that the testing durations for systems, studio and two study centres are the same, at about 1 month. Studio testing has to start after system testing finishes because the studio functions rely on the videoconferencing system.

#### **5. Rollout**

As required, a studio and two study centres have been established by year 1. The first two study centres can roll out after studio testing, study centre testing and website content editing. This is

because the study centres are expected to deliver classes and intake new students after year 1, and the studio is where the lecturer delivers classes. It is assumed that a content editor is hired to join the project team and he will edit OEU's website and social media platforms to make this project more attractive. This editing activity serves the general marketing purpose, so it should be done before the rollout of the first two study centres. It starts after the system testing is completed and it is estimated to take a month. It is assumed that two study centres will roll out together and this activity takes about a month. For the rollout, Daniel Ross (business and marketing specialist) will be responsible for marketing, and the two system analysts and Aneshree Naik (educational expert) will ensure all the systems work well and meet educational requirements. Each rollout (for two study centres) is estimated to take a month, and there will be 5 rollouts in total.

## 6. Training

After the first two study centres have been tested, training will be provided by Stephanie Gerald (videoconferencing specialist) in the study centres and staff will be trained on using videoconferencing system for a month. Then, John Smith (learning management system expert) will train the staff on the learning management system (LMS) for 2 weeks. This is because videoconferencing system is more sophisticated than LMS and it requires more technical skills.

## 7. Closing

After successful rollout of all 10 study centres (5 rollout activities with two at a time), the project can enter the closing phase, and Yidie Hu (project manager) will work for the entire one month on this activity. First, she will write the final project report and based on this report, she can further work on final presentation and lessons learned report.

## Task 3.2 WBS update

ID	Task Name	Duration	Start	Finish	Predecessors
1	<b>1 Concept</b>	<b>48 days</b>	<b>Tue 16/11/21</b>	<b>Thu 20/01/22</b>	
2	<b>1.1 Define requirements</b>	<b>10 days</b>	<b>Tue 16/11/21</b>	<b>Mon 29/11/21</b>	
3	1.1.1 Define accreditation requirements	10 days	Tue 16/11/21	Mon 29/11/21	
4	1.1.2 Define user requirements	10 days	Tue 16/11/21	Mon 29/11/21	3SS
5	1.1.3 Define system requirements	10 days	Tue 16/11/21	Mon 29/11/21	3SS
6	1.1.4 Define content requirements	10 days	Tue 16/11/21	Mon 29/11/21	3SS
7	1.1.5 Define quality requirements	10 days	Tue 16/11/21	Mon 29/11/21	3SS
8	<b>1.2 Define specific functionality &amp; characteristics</b>	<b>14 days</b>	<b>Tue 30/11/21</b>	<b>Fri 17/12/21</b>	<b>2</b>
9	1.2.1 Define study centre functionality & characteristics	13 days	Tue 30/11/21	Fri 17/12/21	7,3,4,5,6
10	1.2.2 Define studio functionality & characteristics	13 days	Tue 30/11/21	Fri 17/12/21	3
11	Completion of defining requirements & product characteristics	0 days	Fri 17/12/21	Fri 17/12/21	10
12	<b>1.3 Project management</b>	<b>23 days</b>	<b>Fri 17/12/21</b>	<b>Wed 19/01/22</b>	<b>8</b>
13	1.3.1 Brief project team	9 days	Fri 17/12/21	Thu 30/12/21	9,11
14	1.3.2 Develop project plan	9 days	Thu 30/12/21	Wed 12/01/22	13
15	1.3.3 Define risk and risk management approach	5 days	Wed 12/01/22	Wed 19/01/22	14
16	Completion of project plan	0 days	Wed 19/01/22	Wed 19/01/22	15
17	<b>2 Design</b>	<b>19 days</b>	<b>Wed 19/01/22</b>	<b>Tue 15/02/22</b>	
18	<b>2.1 System design</b>	<b>19 days</b>	<b>Wed 19/01/22</b>	<b>Mon 14/02/22</b>	<b>12</b>
19	2.1.1 Videoconferencing system design	19 days	Wed 19/01/22	Mon 14/02/22	16
20	2.1.2 Student learning management system design	10 days	Wed 19/01/22	Tue 1/02/22	19SS
21	2.1.3 OEU website design	5 days	Wed 19/01/22	Tue 25/01/22	19SS
22	2.1.4 Assessment system design	5 days	Wed 19/01/22	Tue 25/01/22	19SS
23	<b>2.2 Studio design</b>	<b>12 days</b>	<b>Wed 19/01/22</b>	<b>Thu 3/02/22</b>	<b>12</b>
24	2.2.1 Studio blueprint	7 days	Wed 19/01/22	Fri 28/01/22	16
25	2.2.2 Design hardware installation location	5 days	Fri 28/01/22	Thu 3/02/22	24
26	2.2.3 IT infrastructure design	5 days	Fri 28/01/22	Thu 3/02/22	24
27	<b>2.3 Study centre design</b>	<b>10 days</b>	<b>Wed 19/01/22</b>	<b>Tue 1/02/22</b>	<b>12</b>
28	2.3.1 Study centre blueprint	5 days	Wed 19/01/22	Tue 25/01/22	19SS

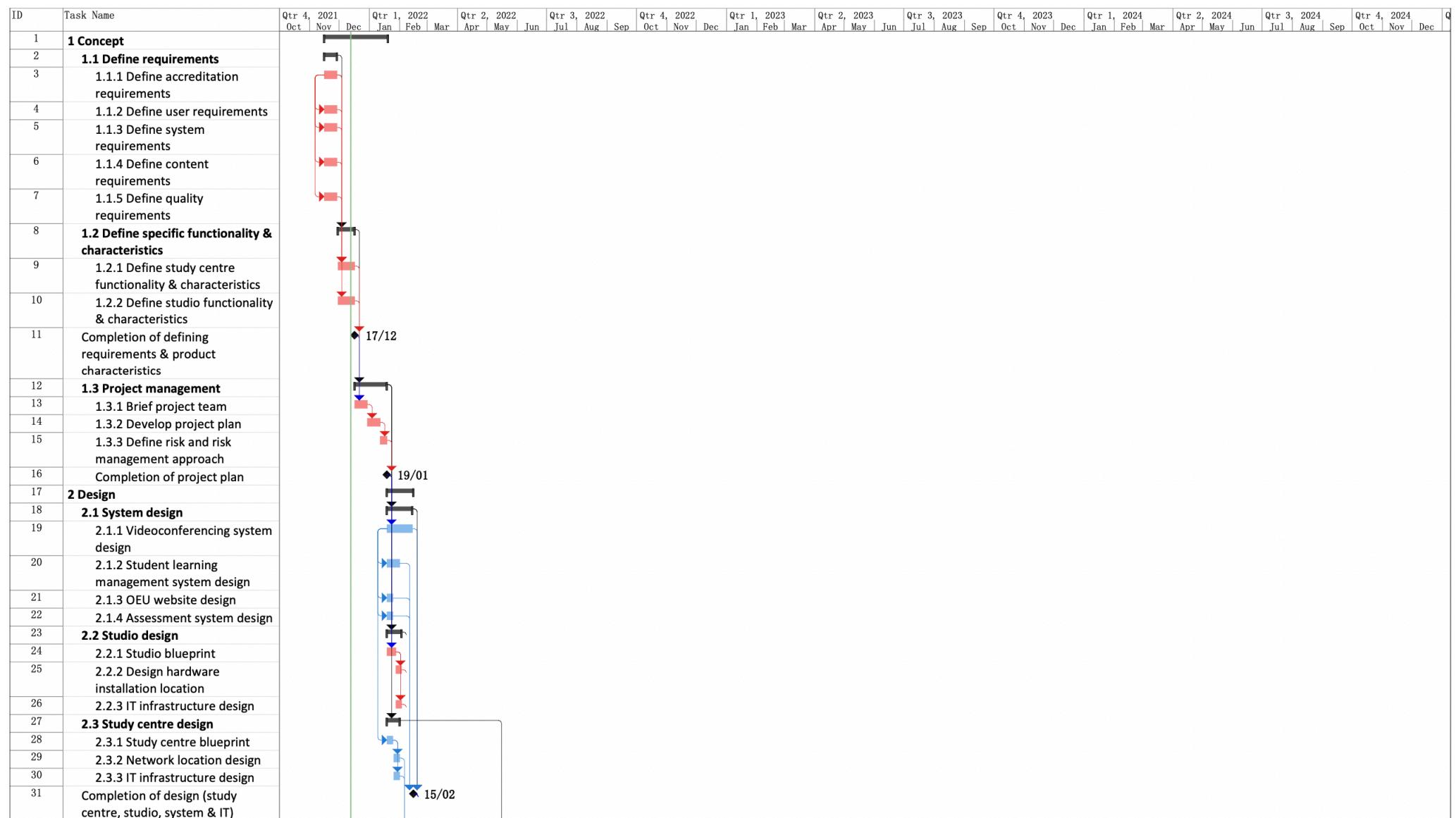
29	2.3.2 Network location design	5 days	Wed 26/01/22	Tue 1/02/22	28
30	2.3.3 IT infrastructure design	5 days	Wed 26/01/22	Tue 1/02/22	28
31	Completion of design (study centre, studio, system & IT)	0 days	Tue 15/02/22	Tue 15/02/22	18,19,20,21,22
32	<b>3 Development</b>	<b>665 days</b>	<b>Thu 3/02/22</b>	<b>Wed 21/08/24</b>	
33	<b>3.1 System development</b>	<b>153 days</b>	<b>Tue 15/02/22</b>	<b>Thu 15/09/22</b>	<b>18</b>
34	3.1.1 Videoconferencing system development	151 days	Tue 15/02/22	Tue 13/09/22	31
35	3.1.2 Student learning management system development	63 days	Tue 15/02/22	Thu 12/05/22	31
36	3.1.3 OEU website modifications	10 days	Tue 15/02/22	Mon 28/02/22	31
37	3.1.4 Develop assessment policy and procedures document	10 days	Tue 15/02/22	Mon 28/02/22	31
38	Completion of system & IT development	0 days	Thu 15/09/22	Thu 15/09/22	33
39	<b>3.2 Studio development</b>	<b>74 days</b>	<b>Thu 3/02/22</b>	<b>Tue 17/05/22</b>	<b>23</b>
40	3.2.1 Equipment purchase	21 days	Fri 4/02/22	Fri 4/03/22	26,25,29,30
41	3.2.2 Equipment installation	52 days	Mon 7/03/22	Tue 17/05/22	40
42	3.2.3 IT infrastructure installation	52 days	Mon 7/03/22	Tue 17/05/22	40
43	Completion of studio development	0 days	Wed 18/05/22	Wed 18/05/22	39
44	<b>3.3 Study centre 1&amp;2 development</b>	<b>109 days</b>	<b>Wed 18/05/22</b>	<b>Mon 17/10/22</b>	<b>27,39</b>
45	3.3.1 Lease contract agreement with local community	10 days	Wed 18/05/22	Tue 31/05/22	41,42
46	3.3.2 Equipment purchase	21 days	Wed 18/05/22	Wed 15/06/22	45SS
47	3.3.3 Equipment installation	88 days	Thu 16/06/22	Mon 17/10/22	46,45
48	3.3.4 IT infrastructure installation	88 days	Thu 16/06/22	Mon 17/10/22	46
49	<b>3.4 Study centre 3&amp;4 development</b>	<b>120 days</b>	<b>Mon 17/10/22</b>	<b>Fri 31/03/23</b>	<b>44</b>
50	3.4.1 Lease contract agreement with local community	10 days	Tue 18/10/22	Mon 31/10/22	48,47
51	3.4.2 Equipment purchase	22 days	Tue 18/10/22	Wed 16/11/22	50SS
52	3.4.3 Equipment installation	97 days	Thu 17/11/22	Fri 31/03/23	51,50
53	3.4.4 IT infrastructure installation	97 days	Thu 17/11/22	Fri 31/03/23	51
54	<b>3.5 Study centre 5&amp;6 development</b>	<b>121 days</b>	<b>Mon 3/04/23</b>	<b>Mon 18/09/23</b>	<b>49</b>
55	3.5.1 Lease contract agreement with local community	10 days	Mon 3/04/23	Fri 14/04/23	53,52
56	3.5.2 Equipment purchase	21 days	Mon 3/04/23	Mon 1/05/23	55SS
57	3.5.3 Equipment installation	99 days	Tue 2/05/23	Mon 18/09/23	56,55
58	3.5.4 IT infrastructure installation	99 days	Tue 2/05/23	Mon 18/09/23	56

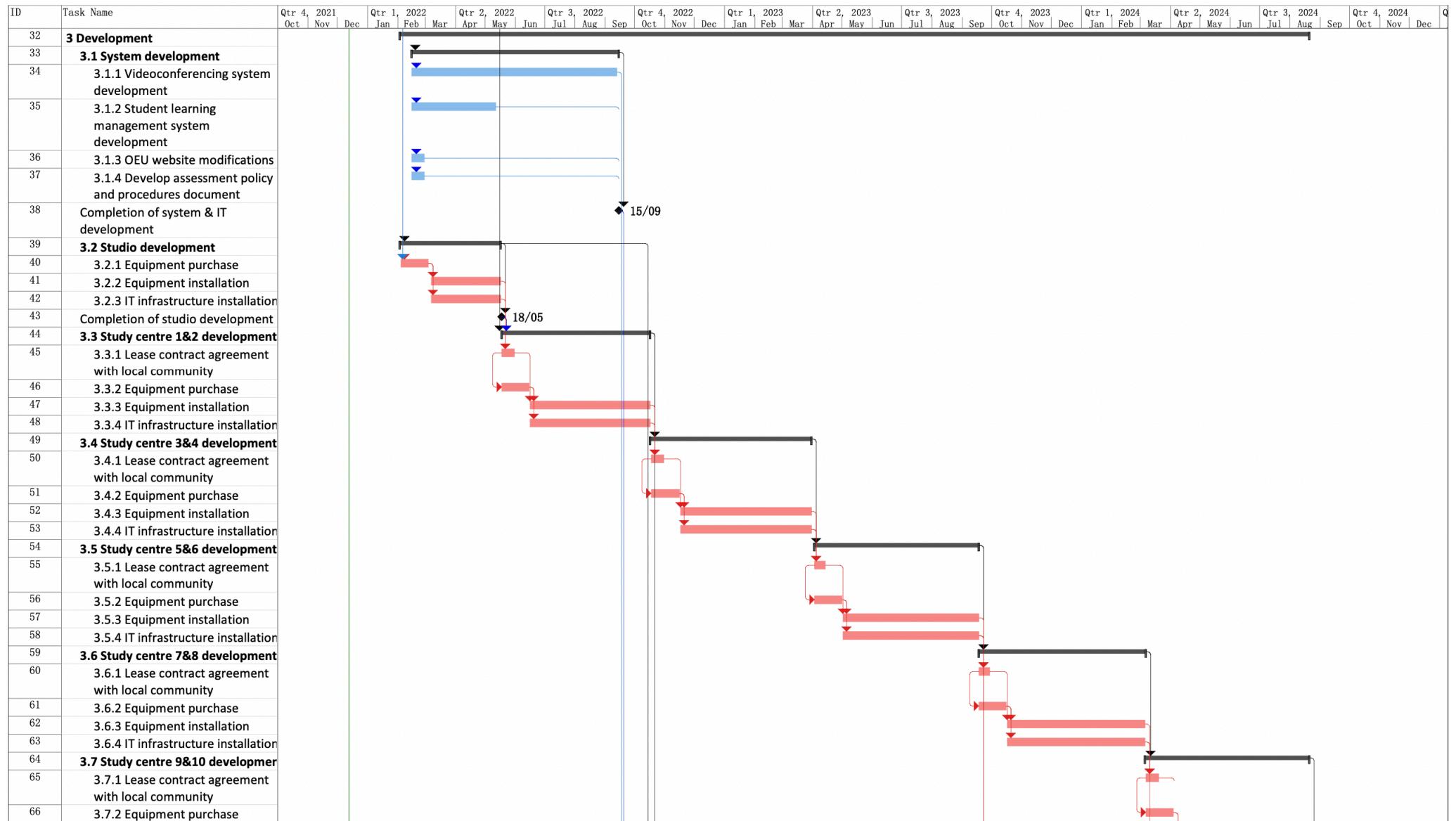
59	<b>3.6 Study centre 7&amp;8 development</b>	<b>123 days</b>	<b>Mon 18/09/23</b>	<b>Thu 7/03/24</b>	<b>54</b>
60	3.6.1 Lease contract agreement with local community	10 days	Mon 18/09/23	Fri 29/09/23	58,57
61	3.6.2 Equipment purchase	21 days	Mon 18/09/23	Mon 16/10/23	60SS
62	3.6.3 Equipment installation	102 days	Tue 17/10/23	Wed 6/03/24	61,60
63	3.6.4 IT infrastructure installation	102 days	Tue 17/10/23	Wed 6/03/24	61
64	<b>3.7 Study centre 9&amp;10 development</b>	<b>120 days</b>	<b>Wed 6/03/24</b>	<b>Wed 21/08/24</b>	<b>59</b>
65	3.7.1 Lease contract agreement with local community	10 days	Thu 7/03/24	Wed 20/03/24	63,62
66	3.7.2 Equipment purchase	21 days	Thu 7/03/24	Thu 4/04/24	65SS
67	3.7.3 Equipment installation	98 days	Fri 5/04/24	Tue 20/08/24	66,65
68	3.7.4 IT infrastructure installation	98 days	Fri 5/04/24	Tue 20/08/24	66
69	Completion of study centre development	0 days	Wed 21/08/24	Wed 21/08/24	64
70	<b>4 Testing</b>	<b>528 days</b>	<b>Thu 15/09/22</b>	<b>Mon 23/09/24</b>	
71	<b>4.1 System testing</b>	<b>22 days</b>	<b>Thu 15/09/22</b>	<b>Fri 14/10/22</b>	<b>38</b>
72	4.1.1 Videoconferencing system testing	21 days	Thu 15/09/22	Fri 14/10/22	34,35,36,37
73	4.1.2 Student learning management system testing	21 days	Thu 15/09/22	Fri 14/10/22	72SS
74	<b>4.2 Studio testing</b>	<b>21 days</b>	<b>Mon 17/10/22</b>	<b>Tue 15/11/22</b>	<b>71,39</b>
75	4.2.1 Equipment testing	20 days	Tue 18/10/22	Tue 15/11/22	73,72
76	4.2.2 Internet testing	5 days	Tue 18/10/22	Mon 24/10/22	75SS
77	4.2.3 Videoconferencing testing	15 days	Tue 25/10/22	Tue 15/11/22	76
78	<b>4.3 Study centre 1&amp;2 testing</b>	<b>21 days</b>	<b>Mon 17/10/22</b>	<b>Tue 15/11/22</b>	<b>71,44</b>
79	4.3.1 Equipment testing	20 days	Tue 18/10/22	Mon 14/11/22	73,72
80	4.3.2 Internet testing	6 days	Tue 18/10/22	Tue 25/10/22	79SS
81	4.3.3 Videoconferencing testing	14 days	Wed 26/10/22	Mon 14/11/22	80
82	<b>4.4 Study centre 3&amp;4 testing</b>	<b>21 days</b>	<b>Fri 31/03/23</b>	<b>Fri 28/04/23</b>	<b>49</b>
83	4.4.1 Equipment testing	20 days	Mon 3/04/23	Fri 28/04/23	53
84	4.4.2 Internet testing	6 days	Mon 3/04/23	Mon 10/04/23	83SS
85	4.4.3 Videoconferencing testing	14 days	Tue 11/04/23	Fri 28/04/23	84
86	<b>4.5 Study centre 5&amp;6 testing</b>	<b>24 days</b>	<b>Mon 18/09/23</b>	<b>Fri 20/10/23</b>	<b>54</b>
87	4.5.1 Equipment testing	20 days	Tue 19/09/23	Mon 16/10/23	58
88	4.5.2 Internet testing	6 days	Tue 19/09/23	Tue 26/09/23	87SS

89	4.5.3 Videoconferencing testing	16 days	Wed 27/09/23	Wed 18/10/23	88
90	<b>4.6 Study centre 7&amp;8 testing</b>	<b>23 days</b>	<b>Thu 7/03/24</b>	<b>Tue 9/04/24</b>	<b>59</b>
91	4.6.1 Equipment testing	20 days	Fri 8/03/24	Thu 4/04/24	63
92	4.6.2 Internet testing	6 days	Fri 8/03/24	Fri 15/03/24	91SS
93	4.6.3 Videoconferencing testing	16 days	Mon 18/03/24	Mon 8/04/24	92
94	<b>4.7 Study centre 9&amp;10 testing</b>	<b>24 days</b>	<b>Tue 20/08/24</b>	<b>Mon 23/09/24</b>	<b>69</b>
95	4.7.1 Equipment testing	20 days	Wed 21/08/24	Tue 17/09/24	68,67
96	4.7.2 Internet testing	6 days	Wed 21/08/24	Wed 28/08/24	95SS
97	4.7.3 Videoconferencing testing	17 days	Thu 29/08/24	Fri 20/09/24	96
98	Completion of testing	0 days	Mon 23/09/24	Mon 23/09/24	94
99	<b>5 Training</b>	<b>36 days</b>	<b>Tue 15/11/22</b>	<b>Wed 4/01/23</b>	
100	<b>5.1 Videoconferencing system training</b>	<b>25 days</b>	<b>Wed 16/11/22</b>	<b>Tue 20/12/22</b>	<b>78</b>
101	5.1.1 Videoconferencing system training plan	3 days	Tue 15/11/22	Thu 17/11/22	81,79,77,75
102	5.1.2 Videoconferencing system training implementation	20 days	Fri 18/11/22	Thu 15/12/22	101
103	5.1.3 Videoconferencing system training documentation	1 day	Fri 16/12/22	Fri 16/12/22	102
104	<b>5.2 Student learning management system training</b>	<b>11 days</b>	<b>Tue 20/12/22</b>	<b>Tue 3/01/23</b>	<b>100</b>
105	5.2.1 Student learning management system training plan	1 day	Mon 19/12/22	Mon 19/12/22	103
106	5.2.2 Student learning management system training implementation	8 days	Tue 20/12/22	Thu 29/12/22	105
107	5.2.3 Student learning management system training document	1 day	Fri 30/12/22	Fri 30/12/22	106
108	Completion of training	0 days	Wed 4/01/23	Wed 4/01/23	104
109	<b>6 Rollout</b>	<b>524 days</b>	<b>Fri 14/10/22</b>	<b>Wed 16/10/24</b>	
110	<b>6.1 Website content editing</b>	<b>24 days</b>	<b>Fri 14/10/22</b>	<b>Wed 16/11/22</b>	<b>71</b>
111	6.1.1 OEU website editing	12 days	Fri 14/10/22	Mon 31/10/22	73,72
112	6.1.2 OEU social media editing	12 days	Tue 1/11/22	Wed 16/11/22	111
113	<b>6.2 Study centre 1&amp;2 rollout</b>	<b>22 days</b>	<b>Tue 15/11/22</b>	<b>Thu 15/12/22</b>	<b>78,74</b>
114	6.2.1 Overall evaluation	6 days	Wed 16/11/22	Wed 23/11/22	81
115	6.2.2 Marketing	20 days	Wed 16/11/22	Tue 13/12/22	114SS
116	<b>6.3 Study centre 3&amp;4 rollout</b>	<b>21 days</b>	<b>Fri 28/04/23</b>	<b>Fri 26/05/23</b>	<b>82</b>
117	6.3.1 Overall evaluation	6 days	Mon 1/05/23	Mon 8/05/23	85,83
118	6.3.2 Marketing	20 days	Mon 1/05/23	Fri 26/05/23	117SS

119	<b>6.4 Study centre 5&amp;6 rollout</b>	<b>23 days</b>	<b>Fri 20/10/23</b>	<b>Wed 22/11/23</b>	<b>86</b>
120	6.4.1 Overall evaluation	6 days	Mon 23/10/23	Mon 30/10/23	89,87
121	6.4.2 Marketing	20 days	Mon 23/10/23	Fri 17/11/23	120SS
122	<b>6.5 Study centre 7&amp;8 rollout</b>	<b>21 days</b>	<b>Mon 8/04/24</b>	<b>Tue 7/05/24</b>	<b>90</b>
123	6.5.1 Overall evaluation	6 days	Tue 9/04/24	Tue 16/04/24	93,91
124	6.5.2 Marketing	20 days	Tue 9/04/24	Mon 6/05/24	123SS
125	<b>6.6 Study centre 9&amp;10 rollout</b>	<b>18 days</b>	<b>Mon 23/09/24</b>	<b>Wed 16/10/24</b>	<b>98</b>
126	6.6.1 Overall evaluation	6 days	Mon 23/09/24	Mon 30/09/24	97,95
127	6.6.2 Marketing	18 days	Mon 23/09/24	Wed 16/10/24	95,97
128	Completion of study centre rollout	0 days	Wed 16/10/24	Wed 16/10/24	113,116,119,122,125
129	<b>7 Closing</b>	<b>21 days</b>	<b>Wed 16/10/24</b>	<b>Wed 13/11/24</b>	
130	7.1 Final project report	18 days	Thu 17/10/24	Mon 11/11/24	110,107,126,127,124,123,120,121,115,114,117,118,112,108,128
131	7.2 Final project presentation	2 days	Tue 12/11/24	Wed 13/11/24	130
132	7.3 Lessons learned report	10 days	Thu 17/10/24	Wed 30/10/24	130SS

### Task 3.3 Gantt chart





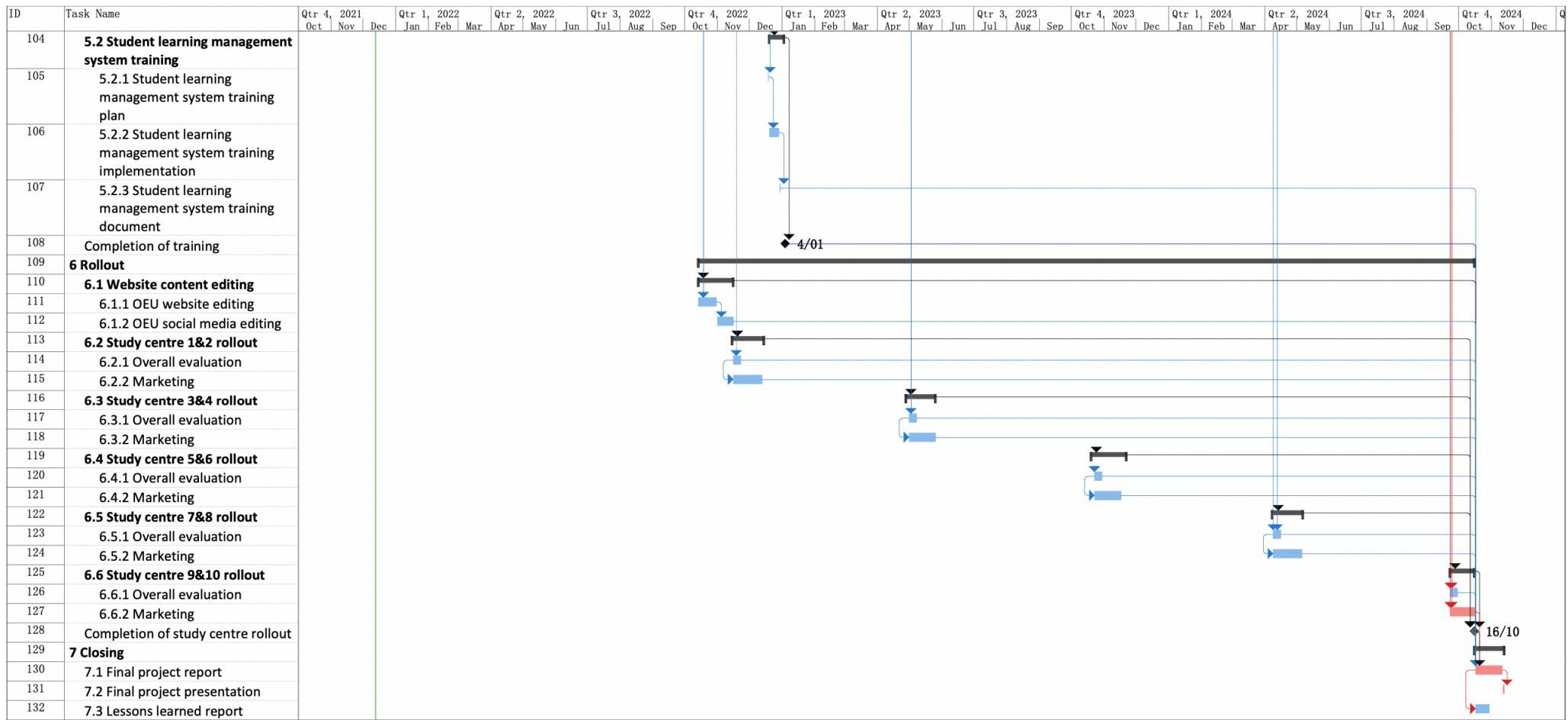
ID	Task Name	Qtr 4, 2021 Oct Nov Dec	Qtr 1, 2022 Jan Feb Mar	Qtr 2, 2022 Apr May Jun	Qtr 3, 2022 Jul Aug Sep	Qtr 4, 2022 Oct Nov Dec	Qtr 1, 2023 Jan Feb Mar	Qtr 2, 2023 Apr May Jun	Qtr 3, 2023 Jul Aug Sep	Qtr 4, 2023 Oct Nov Dec	Qtr 1, 2024 Jan Feb Mar	Qtr 2, 2024 Apr May Jun	Qtr 3, 2024 Jul Aug Sep	Qtr 4, 2024 Oct Nov Dec
67	3.7.3 Equipment installation													
68	3.7.4 IT infrastructure installation													
69	Completion of study centre development													
70	<b>4 Testing</b>													
71	<b>4.1 System testing</b>													
72	4.1.1 Videoconferencing system testing													
73	4.1.2 Student learning management system testing													
74	<b>4.2 Studio testing</b>													
75	4.2.1 Equipment testing													
76	4.2.2 Internet testing													
77	4.2.3 Videoconferencing testing													
78	<b>4.3 Study centre 1&amp;2 testing</b>													
79	4.3.1 Equipment testing													
80	4.3.2 Internet testing													
81	4.3.3 Videoconferencing testing													
82	<b>4.4 Study centre 3&amp;4 testing</b>													
83	4.4.1 Equipment testing													
84	4.4.2 Internet testing													
85	4.4.3 Videoconferencing testing													
86	<b>4.5 Study centre 5&amp;6 testing</b>													
87	4.5.1 Equipment testing													
88	4.5.2 Internet testing													
89	4.5.3 Videoconferencing testing													
90	<b>4.6 Study centre 7&amp;8 testing</b>													
91	4.6.1 Equipment testing													
92	4.6.2 Internet testing													
93	4.6.3 Videoconferencing testing													
94	<b>4.7 Study centre 9&amp;10 testing</b>													
95	4.7.1 Equipment testing													
96	4.7.2 Internet testing													
97	4.7.3 Videoconferencing testing													
98	Completion of testing													
99	<b>5 Training</b>													
100	<b>5.1 Videoconferencing system training</b>													
101	5.1.1 Videoconferencing system training plan													
102	5.1.2 Videoconferencing system training implementation													
103	5.1.3 Videoconferencing system training documentation													

The Gantt chart illustrates the project timeline across four years (2021-2024). Key milestones are marked with diamonds:

- Completion of study centre development: 21/08 (Q4 2022)
- End of testing: 23/09 (Q4 2024)

Tasks are color-coded by category:

- Green**: 3.7.3 Equipment installation, 3.7.4 IT infrastructure installation, Completion of study centre development.
- Blue**: All testing tasks (4.1 to 4.7) and the start of training (5.1).
- Red**: The final phase of training (5.1.3) and the completion of testing (23/09).



### Note:

Red bar: task on critical path

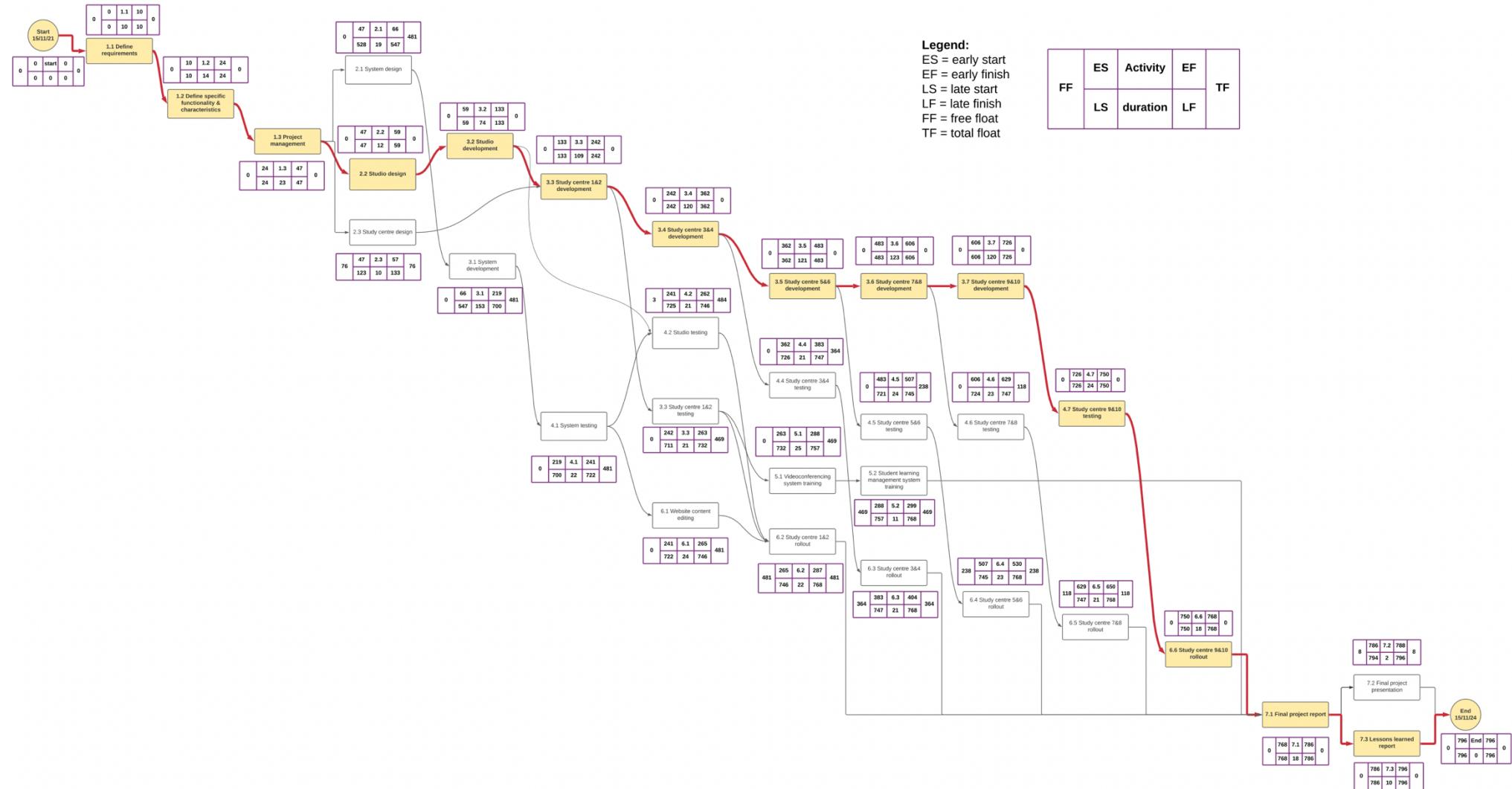
Blue bar: task not on critical path

Black bar: summary task

Black diamond: milestone

## Task 4

If the diagram is too small to see clearly, please refer to the link for Lucidchart: [https://lucid.app/lucidchart/c4cad410-576b-48e9-98a5-db60bf5ff09e/edit?viewport\\_loc=5674%2C89%2C2139%2C2577%2C0\\_0&invitationId=inv\\_55ea5f08-a86f-4b8f-a1ba-891a548e063c](https://lucid.app/lucidchart/c4cad410-576b-48e9-98a5-db60bf5ff09e/edit?viewport_loc=5674%2C89%2C2139%2C2577%2C0_0&invitationId=inv_55ea5f08-a86f-4b8f-a1ba-891a548e063c)



The critical path is indicated by red arrows and the activities on critical path are coloured with yellow.

## Case 4

### Assumptions

#### 1. Concept

This section involves defining requirements, defining specific functionality and characteristics, and project management. This section is assumed to be completed by the project manager, Yidie Hu, who fully commits to this project for the whole year (salary at \$108000 per year). This part is estimated to take a month.

#### 2. Design

Videoconferencing specialist, Stephanie Gerald and network specialist, Lew Stone are in charge of designing 10 study centres as well as a studio. Stephanie Gerald spends 65% of time on this project and her annual salary is \$50000 on full time basis. Lew Stone spends 70% of time on this project and his annual salary is \$96000 on full time basis.

##### 2.1 Study centre design

The design starts from week 1 in month 2 and it is estimated to take 2 weeks. Lew Stone will spend all 2 weeks on this activity while Stephanie Gerald will only work on this in week 2.

##### 2.2 Studio design

After completing study centre design, Lew Stone begin to work on the studio design and this process take 2 weeks. Lew Stone will spend all 2 weeks on this activity while Stephanie Gerald will only work on this in week 4.

##### 2.3 System design

From week 1 in month 2, the system design begins. LMS expert, John Smith (\$55000 salary with 40% FTE), 2 systems analysts, Vanessa Smart and Rodney Gordon (\$96000 salary with 25% FTE each), and educational expert, Aneshree Naik (\$70000 salary with 45% FTE) will work on this task during the entire month 2, but Aneshree Naik will only design the format of assessment. Stephanie Gerald will work with them in week 1 and week 3. It is assumed that 5 developers and programmers are hired to form a programming team, and they will work on designing and writing code for all the systems. All the programmers work full time on this project (100% FTE) and their individual salary is the same at \$60000 per year.

#### 3. Development

##### 3.1 System development

The system development runs from month 3 to month 11 week 2, which takes 8.5 months in total. For the whole process, the programming team and 2 systems analyst work on the system development. Stephanie Gerald will join the team after finishing her work on study centre development, and she works for the last 1.5 months for some system modifications. John Smith will work for the last 2.5 months to develop learning management system as it is relatively a light task.

##### 3.2 Study centre development

After the studio has been completed, study centre development begins. 10 study centres are established at the speed of 2 study centres per month, so it takes 5 months in total (month 5-month 9). Stephanie Gerald and Lew Stone spend the whole 5 months on this. After Stephanie Gerald goes to work on system development, Lew Stone keeps working on the study centres for technical support. In addition, project manager, Yidie Hu will also participate in this activity.

### **3.3 Studio development**

The studio development takes 2 months (month 3 and month 4), and Stephanie Gerald and Lew Stone spend the whole time on this. In addition, project manager, Yidie Hu will also participate in this activity.

## **4. Training**

It is assumed that 2 staff from each study centre needs training on videoconferencing system and learning management system, and all their salary rates are the same at \$25 per hour and they will be paid for attending the training. Thus, the hourly pay for all 20 staff is \$500.

### **4.1 Videoconferencing system training**

It is assumed that videoconferencing training will require Stephanie Gerald to travel to each study centre and conduct the training. The training runs for 2 days (8 hours each day) in each study centre. Therefore, the total hours is  $2*8*10 = 160$  hours. The pay for each hour is the hourly salary of the 2 staff ( $\$25*2 = \$50$ ). The travel takes 28 days in total as 4 weekends are included. Although Stephanie Gerald normally works on 65% FTE, during the training month (month 12), she will work at 100% FTE on this project training.

### **4.2 Learning management system training**

It is assumed that the learning management system training will be conducted by John Smith on Zoom, so there will be no travel cost. John Smith will work 2 weeks on the training with 40% FTE ( $2*5*8*0.4 = 32$  hours). As this system is relatively easy to use, the training will be 20 hours in total, which means John Smith will have 12 hours to prepare training materials, creating classes and sending links to the trainees. The cost for trainees is \$500 per hour ( $\$25*2*10=\$500$ ), so the total trainee cost is  $20*\$500 = \$10000$ .

## **5. Testing**

The testing will be conducted continuously through month 4 to month 11 on all hardware and software used in the development of all study centres, studio and system. The testing will be progressive with the development, and based on similar projects, the estimated testing cost will be 10% of total system and equipment cost.

## **6. Roll out**

In each month, 2 study centres will be completed and at the end of each month, these two newly established will roll out together. Therefore, from month 5 to month 9, marketing for rollout will be conducted for the 2 study centres completed in each month.

### **6.1 Overall evaluation**

After all 10 study centres being completed in month 11, there will be overall evaluation on all the study centres by two system analysts (Vanessa Smart and Rodney Gordon) and Aneshree Naik, who will ensure all the systems work well and meet educational requirements. This also helps the project manager to get prepared for the closing activities.

### **6.2 Marketing**

It is assumed that only limited resources will be spent on marketing activates, considering that marketing is not a requirement by OEU top management, but it makes positive contribution to the project's success. After 2 study centres being completed in each month, there will be marketing activities on these 2 centres. \$3000 will be spent on advertisement for each study centre, so the advertisement cost is \$6000 each month. Also, the business and marketing expert, Daniel Ross will work on advertising activities from month 5 to month 9. He will only spend 25% of time on this activity and his annual salary is \$72000 on

full time basis. In addition, in the last 2 months, a part-time (50% FTE) content editor is also hired to edit OEU's website and social media platforms to make this project more attractive.

## 7. Reserves

As directed, contingency reserves will be estimated at 15% of the total estimate.

In conclusion, the following is the details human resources used in this project:

<b>name</b>	<b>role</b>	<b>annual salary</b>	<b>FTE</b>	<b>time frame</b>	<b>task</b>
Yidie Hu	project management	\$ 108,000	100%	month 1-12	1. Concpet
					3.2 Study centre development
					3.3 Studio development
Stephanie Gerald	videoconferencing specialist	\$ 50,000	65%	month 2-12	2. Design
					3. Development
					4.1 Videoconferencing system training
Lew Stone	network specialist	\$ 96,000	70%	month 2-11	5. Testing
					2.1 Study centre design
					2.2 Studio design
Aneshree Naik	educational expert	\$ 70,000	45%	month 2 & month 12	3.2 Study centre development
					3.3 Studio development
					5. Testing
John Smith	LMS expert	\$ 55,000	40%	month 2 & month 9-11	2.3 System design
					3.1 System development
					4.2 Learning management system training
each programming member	developers/programmers team	\$ 60,000	100%	month 2-11	5. Testing
					2.3 System design
					3.1 System development
Vanessa Smart	systems analyst	\$ 96,000	25%	month 2-12	5. Testing
					6.1 overall evaluation
					6.2 marketing
Daniel Ross	business and marketing expert	\$ 72,000	25%	month 5-9	6.2 marketing
James Clerk	content editor	\$ 67,000	50%	month 11-12	6.2 marketing

## Task 1

### Hybrid Campus Project Cost Estimate Created December 7

	#Units/Hrs	Cost/Unit/Hr	Subtotal	WBS Level 2 Totals	% of Total
<b>WBS Items</b>					
<b>1. Concept</b>				<b>\$ 108,000</b>	<b>7%</b>
project manager	2080	\$ 52	\$ 108,000		
<b>2. Design</b>				<b>\$ 41,767</b>	<b>3%</b>
<b>2.1 Study centre design</b>					
videoconferencing specialist	28	\$ 24	\$ 677		
network specialist	61	\$ 46	\$ 2,800		
<b>2.2 Studio design</b>					
videoconferencing specialist	28	\$ 24	\$ 677		
network specialist	61	\$ 46	\$ 2,800		
<b>2.3 System design</b>					
videoconferencing specialist	56	\$ 24	\$ 1,354		
LMS expert	69	\$ 26	\$ 1,833		
developers/programmers team (5 members in total)	173	\$ 144	\$ 25,000		
systems analyst (2 analysts)	87	\$ 46	\$ 4,000		
educational expert	78	\$ 34	\$ 2,625		
<b>3. Development</b>				<b>\$ 945,704</b>	<b>63%</b>
<b>3.1 System development</b>					
videoconferencing specialist	169	\$ 24	\$ 4,063		
LMS expert	173	\$ 26	\$ 4,583		
developers/programmers team (5 members in total)	1473	\$ 144	\$ 212,500		
systems analyst (2 analysts)	737	\$ 46	\$ 34,000		
<b>3.2 Study centre development</b>					
<b>hardware</b>					
television screen	20	\$ 8,000	\$ 160,000		

camera	10	\$ 5,000	\$ 50,000		
speakers	40	\$ 1,000	\$ 40,000		
microphone	10	\$ 400	\$ 4,000		
computer	10	\$ 3,000	\$ 30,000		
scanner	10	\$ 1,000	\$ 10,000		
other equipment/hardware	10	\$ 3,000	\$ 30,000		
<b>human resources</b>					
videoconferencing specialist	563	\$ 24	\$ 13,542		
network specialist	789	\$ 46	\$ 36,400		
<b>3.3 Studio development</b>					
<b>hardware</b>					
camera	1	\$ 10,000	\$ 10,000		
computer	1	\$ 10,000	\$ 10,000		
television screen	2	\$ 30,000	\$ 60,000		
other equipment/hardware			\$ 220,000		
<b>human resources</b>					
videoconferencing specialist	225	\$ 24	\$ 5,417		
network specialist	243	\$ 46	\$ 11,200		
<b>4. Training</b>				<b>\$ 34,769</b>	<b>2%</b>
<b>4.1 Videoconferencing system training</b>					
videoconferencing specialist	80	\$ 24	\$ 1,923		
travel cost	28	\$ 500	\$ 14,000		
trainee cost (2 staff per study centre, 20 staff in total)	160	\$ 50	\$ 8,000		
<b>4.2 Learning management system training</b>					
LMS expert	32	\$ 26	\$ 846		
trainee cost (2 staff per study centre, 20 staff in total)	20	\$ 500	\$ 10,000		
<b>5. Testing (10% of total system and equipment costs)</b>				<b>\$ 94,570</b>	<b>6%</b>
<b>6. Roll out</b>				<b>\$ 46,396</b>	<b>3%</b>
<b>6.1 Overall evaluation</b>					

educational expert	39	\$ 34	\$ 1,313		
systems analyst (2 analysts)	43	\$ 46	\$ 2,000		
<b>6.2 Marketing</b>					
business and marketing expert	217	\$ 35	\$ 7,500		
advertisement			\$ 30,000		
content editor	173	\$ 32	\$ 5,583		
<b>7. Reserves (15% of total estimate)</b>				<b>\$ 224,331</b>	<b>15%</b>
<b>Total project cost estimate</b>				<b>\$ 1,495,537</b>	

## Task 2

### Hybrid Campus Project Cost Baseline Created December 7

WBS Items	1	2	3	4	5	6	7	8	9	10	11	12	Totals
<b>1. Concept</b>	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	108,000
project manager													
<b>2. Design</b>													
<b>2.1 Study centre design</b>													
videoconferencing specialist		677											677
network specialist			2,800										2,800
<b>2.2 Studio design</b>													
videoconferencing specialist			677										677
network specialist			2,800										2,800
<b>2.3 System design</b>													
videoconferencing specialist		1,354											1,354
LMS expert		1,833											1,833
developers/programmers team (5 members in total)		25,000											25,000
systems analyst (2 analysts)		4,000											4,000
educational expert		2,625											2,625
<b>3. Development</b>													
<b>3.1 System development</b>													
videoconferencing specialist										2,708	1,354		4,063
LMS expert									1,833	1,833	917		4,583
developers/programmers team (5 members in total)		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	12,500		212,500
systems analyst (2 analysts)		4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	2,000		34,000
<b>3.2 Study centre development</b>													
<b>hardware</b>													
television screen					32,000	32,000	32,000	32,000	32,000				160,000
camera					10,000	10,000	10,000	10,000	10,000				50,000
speakers					8,000	8,000	8,000	8,000	8,000				40,000
microphone					800	800	800	800	800				4,000
computer					6,000	6,000	6,000	6,000	6,000				30,000
scanner					2,000	2,000	2,000	2,000	2,000				10,000
other equipment/hardware					6,000	6,000	6,000	6,000	6,000				30,000
<b>human resources</b>													
videoconferencing specialist					2,708	2,708	2,708	2,708	2,708				13,542
network specialist					5,600	5,600	5,600	5,600	5,600	5,600	2,800		36,400
<b>3.3 Studio development</b>													
<b>hardware</b>													
camera			10,000										10,000
computer			10,000										10,000
television screen				60,000									60,000
other equipment/hardware			80,000	140,000									220,000
<b>human resources</b>													
videoconferencing specialist			2,708	2,708									5,417
network specialist			5,600	5,600									11,200

<b>4. Training</b>													
<b>4.1 Videoconferencing system training</b>													
videoconferencing specialist											1,923	1,923	
travel cost											14,000	14,000	
trainee cost (2 staff per study centre, 20 staff in total)											8,000	8,000	
<b>4.2 Learning management system training</b>													
LMS expert											846	846	
trainee cost (2 staff per study centre, 20 staff in total)											10,000	10,000	
<b>5. Testing (10% of total system and equipment costs)</b>	31,662	7,311	7,311	7,311	7,311	7,311	7,311	13,597	12,757			94,570	
<b>6. Roll out</b>													
<b>6.1 Overall evaluation</b>													
educational expert											1,313	1,313	
systems analyst (2 analysts)											2,000	2,000	
<b>6.2 Marketing</b>													
business and marketing expert				1,500	1,500	1,500	1,500					7,500	
advertisement				6,000	6,000	6,000	6,000					30,000	
content editor											2,792	2,792	
<b>7. Reserves</b>	6,265	20,596	67,243	17,538	17,538	17,538	17,538	17,538	15,822	13,790	12,926	224,331	
<b>Total</b>	<b>9,000</b>	<b>57,032</b>	<b>166,905</b>	<b>345,213</b>	<b>143,457</b>	<b>143,457</b>	<b>143,457</b>	<b>143,457</b>	<b>145,290</b>	<b>77,561</b>	<b>68,756</b>	<b>51,953</b>	<b>1,495,537</b>

### Task 3

It is assumed that equal amount of work is scheduled throughout this project.

At the end of month 4, 1/3 of the work should have been completed, but only 25% (1/4) of the work has been completed.

Rate of performance (RP) =  $(1/4)/(1/3) = 75\%$

Earned value (EV) = PV to date \* RP =  $(\$1500000 * 1/3) * 75\% = \$375000$

From what has been given in the scenario, AC = \$600000

Cost variance (CV) = EV-AC =  $\$375000 - \$600000 = - \$225000$

Cost performance index (CPI) = EV/AC =  $\$375000 / \$600000 = 62.5\%$

Schedule variance (SV) = EV-PV =  $\$375000 - (\$1500000 * 1/3) = - \$125000$

Schedule performance index (SPI) = EV/PV =  $\$375000 / (\$1500000 * 1/3) = 75\%$

a) Estimate at completion (EAC) = BAC/CPI =  $\$1500000 / 62.5\% = \$2400000$

b) Estimated time = original time estimate/SPI =  $1 / 75\% = 1.33$  (years)

In other words, the estimated time to complete the project is 1 year and 4 months.

c) N/A for our 3-member group

d)

### Memorandum

To: OEU Directors

From: Yidie Hu, Project manager

Date: 8/12/2021

Subject: Hybrid Campus Project Progress Report

Dear OEU directors,

I'm writing to report the current progress issues of the hybrid campus project. We have completed 4 months of the project which is expected to be completed within one year. However, only 25% of the project has been completed and \$600000 (budget \$1500000) has been spent till now. The situation indicates that the project is over budget and behind schedule, assuming that equal amount of work is scheduled throughout the one-year time. The project is \$225000 over budget and \$125000 behind schedule. Based on this assumption and calculation, the total cost will be \$2400000 and estimated completion time will be 1.33 years (1 year and 4 months). To complete the project within 1 year and within \$1.5 million budget, it is recommended that we can increase the velocity (development speed)

of our Agile sprints in the next 8 months. In addition, we can decrease the time and money on marketing, which is not the core requirements of this project. Marketing is included in the scope of this project to a limited extent as it is a supplementary activity that facilitates the success of our project. Considering the current situation, we can even omit marketing from the scope of the project. Further, we can re-evaluate the project priorities and ensure that low-priority activities are completed after high-priority ones. We will evaluate the schedule and cost in later months and the scope, cost and time of low-priority activities will be further reduced if needed.

Sincerely,

Yidie Hu, Project manager

## Appendix A. Project financial analysis

Project 1: Creating hybrid campuses						
discounted rate	0.09					
	year 0	year 1	year 2	year 3	total	
benefits	\$ -	\$ 200,000.00	\$ 500,000.00	\$ 750,000.00	\$ 1,450,000.00	
discounted factor	1	0.92	0.84	0.77		
<b>discounted benefits</b>	\$ -	\$ 183,486.24	\$ 420,840.00	\$ 579,137.61	\$ 1,183,463.85	
costs	\$ 200,000.00	\$ 260,000.00	\$ 120,000.00	\$ 120,000.00	\$ 700,000.00	
discounted factor	1	0.92	0.84	0.77		
<b>discounted costs</b>	\$ 200,000.00	\$ 238,532.11	\$ 101,001.60	\$ 92,662.02	\$ 632,195.73	
discounted cash flow	\$ (200,000.00)	\$ (55,045.87)	\$ 319,838.40	\$ 486,475.59	\$ 551,268.12	
<b>cumulative disc cash flow</b>	\$ (200,000.00)	\$ (255,045.87)	\$ 64,792.53	\$ 551,268.12		
<b>NPV</b>	\$ 551,268.12					
<b>ROI</b>	87.20%					
<b>payback period</b>	in year 2					

Project 2: Expand online						
discounted rate	0.09					
	year 0	year 1	year 2	year 3	total	
benefits	\$ -	\$ 100,000.00	\$ 200,000.00	\$ 200,000.00	\$ 500,000.00	
discounted factor	1	0.92	0.84	0.77		
<b>discounted benefits</b>	\$ -	\$ 91,743.12	\$ 168,336.00	\$ 154,436.70	\$ 414,515.81	
costs	\$ 145,000.00	\$ 40,000.00	\$ 40,000.00	\$ 40,000.00	\$ 265,000.00	
discounted factor	1	0.92	0.84	0.77		
<b>discounted costs</b>	\$ 145,000.00	\$ 36,697.25	\$ 33,667.20	\$ 30,887.34	\$ 246,251.79	
discounted cash flow	\$ (145,000.00)	\$ 55,045.87	\$ 134,668.80	\$ 123,549.36	\$ 168,264.03	
<b>cumulative disc cash flow</b>	\$ (145,000.00)	\$ (89,954.13)	\$ 44,714.67	\$ 168,264.03		
<b>NPV</b>	\$ 168,264.03					
<b>ROI</b>	68.33%					
<b>payback period</b>	in year 2					

### Project 3: New specialised, physical campuses

<b>discounted rate</b>	<b>0.09</b>				
	<b>year 0</b>	<b>year 1</b>	<b>year 2</b>	<b>year 3</b>	<b>total</b>
benefits	\$ -	\$ 10,000,000.00	\$ 40,000,000.00	\$ 40,000,000.00	\$ 90,000,000.00
discounted factor	1	0.92	0.84	0.77	
<b>discounted benefits</b>	\$ -	\$ 9,174,311.93	\$ 33,667,199.73	\$ 30,887,339.20	\$ 73,728,850.86
costs	\$ 20,000,000.00	\$ 10,000,000.00	\$ 10,000,000.00	\$ 10,000,000.00	\$ 50,000,000.00
discounted factor	1	0.92	0.84	0.77	
<b>discounted costs</b>	\$ 20,000,000.00	\$ 9,174,311.93	\$ 8,416,799.93	\$ 7,721,834.80	\$ 45,312,946.66
discounted cash flow	\$ (20,000,000.00)	\$ -	\$ 25,250,399.80	\$ 23,165,504.40	\$ 28,415,904.20
<b>cumulative disc cash flow</b>	\$ (20,000,000.00)	\$ (20,000,000.00)	\$ 5,250,399.80	\$ 28,415,904.20	
<b>NPV</b>	<b>\$ 28,415,904.20</b>				
<b>ROI</b>	<b>62.71%</b>				
<b>payback period</b>	<b>in year 2</b>				

### Project 4: Upgrade current campuses

<b>discounted rate</b>	<b>0.09</b>				
	<b>year 0</b>	<b>year 1</b>	<b>year 2</b>	<b>year 3</b>	<b>total</b>
benefits	\$ -	\$ 2,000,000.00	\$ 3,000,000.00	\$ 4,000,000.00	\$ 9,000,000.00
discounted factor	1	0.92	0.84	0.77	
<b>discounted benefits</b>	\$ -	\$ 1,834,862.39	\$ 2,525,039.98	\$ 3,088,733.92	\$ 7,448,636.29
costs	\$ 2,400,000.00	\$ 1,000,000.00	\$ 1,000,000.00	\$ 1,000,000.00	\$ 5,400,000.00
discounted factor	1	0.92	0.84	0.77	
<b>discounted costs</b>	\$ 2,400,000.00	\$ 917,431.19	\$ 841,679.99	\$ 772,183.48	\$ 4,931,294.67
discounted cash flow	\$ (2,400,000.00)	\$ 917,431.19	\$ 1,683,359.99	\$ 2,316,550.44	\$ 2,517,341.62
<b>cumulative disc cash flow</b>	\$ (2,400,000.00)	\$ (1,482,568.81)	\$ 200,791.18	\$ 2,517,341.62	
<b>NPV</b>	<b>\$ 2,517,341.62</b>				
<b>ROI</b>	<b>51.05%</b>				
<b>payback period</b>	<b>in year 2</b>				

## Appendix B. Timesheet

<b>Timesheet</b>				
Date submitted:	13/12/21			
Team:	203			
Project team member:	Yidie Hu, Rui Qin, Yueshi Liu			
Tutor:	Anthony Wang			
Date	Task description			Actual hours
13/11/21	case 1 task 2. weighted scoring model			6
15/11/21	case 1 task 3. business case			6
16/11/21	case 1 task 4. project charter			2
21/11/21	case 2 task 1. project scope statement			8
23/11/21	case 2 task 2. requirements traceability matrix			6
27/11/21	case 3 task 1 work breakdown structure			6
27/11/21	case 3 task 2 milestone			0.5
3/12/21	case 3 task 3 WBS & Gantt chart & write-up			20
6/12/21	case 3 task 4 network diagram			8
7/12/21	case 4 task 1 budgetary estimate			10
9/12/21	case 4 task 2 cost baseline			8
11/12/21	case 4 task 3 cost calculations & memo			1.5
12/12/21	collating responses & fine tuning			2
				Running total
				6
				12
				14
				22
				28
				34
				34.5
				54.5
				62.5
				72.5
				80.5
				82
				84

## **Appendix C. Meeting minutes**

### **MEETING MINUTES**

#### **Group 203**

**No: 1-28/11/2021**

**Location:** Zoom

**Attending:** Yidie Hu, Rui Qin, Yueshi Liu

**Apologies:** none

**Meeting started:** 6.00 pm

**Meeting closed:** 8.00 pm

**Confirmation of minutes:** \_\_\_\_\_

Minutes: Meeting No. 1-28/11/2021 confirmed.

#### **Proceedings:**

Yidie Hu and Rui Qin completes Case 1 task 2 weighted scoring model.

Yidie Hu and Yueshi Liu completed Case 1 task 3 financial calculations for 4 projects.

Yidie Hu completes Case 1 task 3 business case.

Rui Qin completes Case 1 task 4 project charter.

Yidie Hu completes Case 2 task 1 scope statement.

Rui Qin completes Case 2 task 2 RTM.

Yueshi Liu and Rui Qin starts Case 3 task 1 and task 3 WBS & Gantt chart

Rui Qin and Yidie Hu starts Case 3 task 2 milestones and task 4 network diagram.

#### **Concerns:**

Yidie Hu and Yueshi Liu have different results for calculations.

Scope is not very clear regarding marketing.

#### **Actions:**

Yidie Hu to attend consultations to clarify scope.

Rui Qin to do calculations to double check.

Yidie Hu to do Case 3 task 3 write-up.

Yidie Hu and Yueshi Liu to start Case 4 task 1 budgetary estimate, task 2 cost baseline and task 3 calculations.

Yidie Hu to write Case 4 task 3 memo.

**Next Meeting:**Zoom- 11/12/2021 7.00pm

**No: 2-11/12/2021**

**Location:** Zoom

**Attending:** Yidie Hu, Rui Qin, Yueshi Liu

**Apologies:** none

**Meeting started:** 7.00 pm

**Meeting closed:** 8.00 pm

**Confirmation of minutes:** \_\_\_\_\_

Minutes: Meeting No. 2-11/12/2021 confirmed.

**Proceedings:**

Yueshi Liu and Rui Qin completed Case 3 task 1 and task 3 WBS & Gantt chart

Rui Qin and Yidie Hu completed Case 3 task 2 milestones and task 4 network diagram.

Yidie Hu completed Case 3 task 3 write-up.

Yidie Hu and Yueshi Liu completed Case 4 task 1 budgetary estimate, task 2 cost baseline and task 3 calculations.

Yidie Hu is still working on Case 4 task 3 memo.

**Concerns:**

Network diagram may be too small when it is printed out.

Project Libre does not work well on Yidie Hu's laptop. We use Microsoft Project on Rui Qin's computer.

**Actions:**

Yidie Hu to attend consultation and check Microsoft Project and network diagram with tutor.

All team members do fine-tuning together.

**Next Meeting:** none