



VR in Vocational Education and Training: the Promises and Pitfalls

Planning to Extend Reality – Creating a VR Lab for Construction Courses

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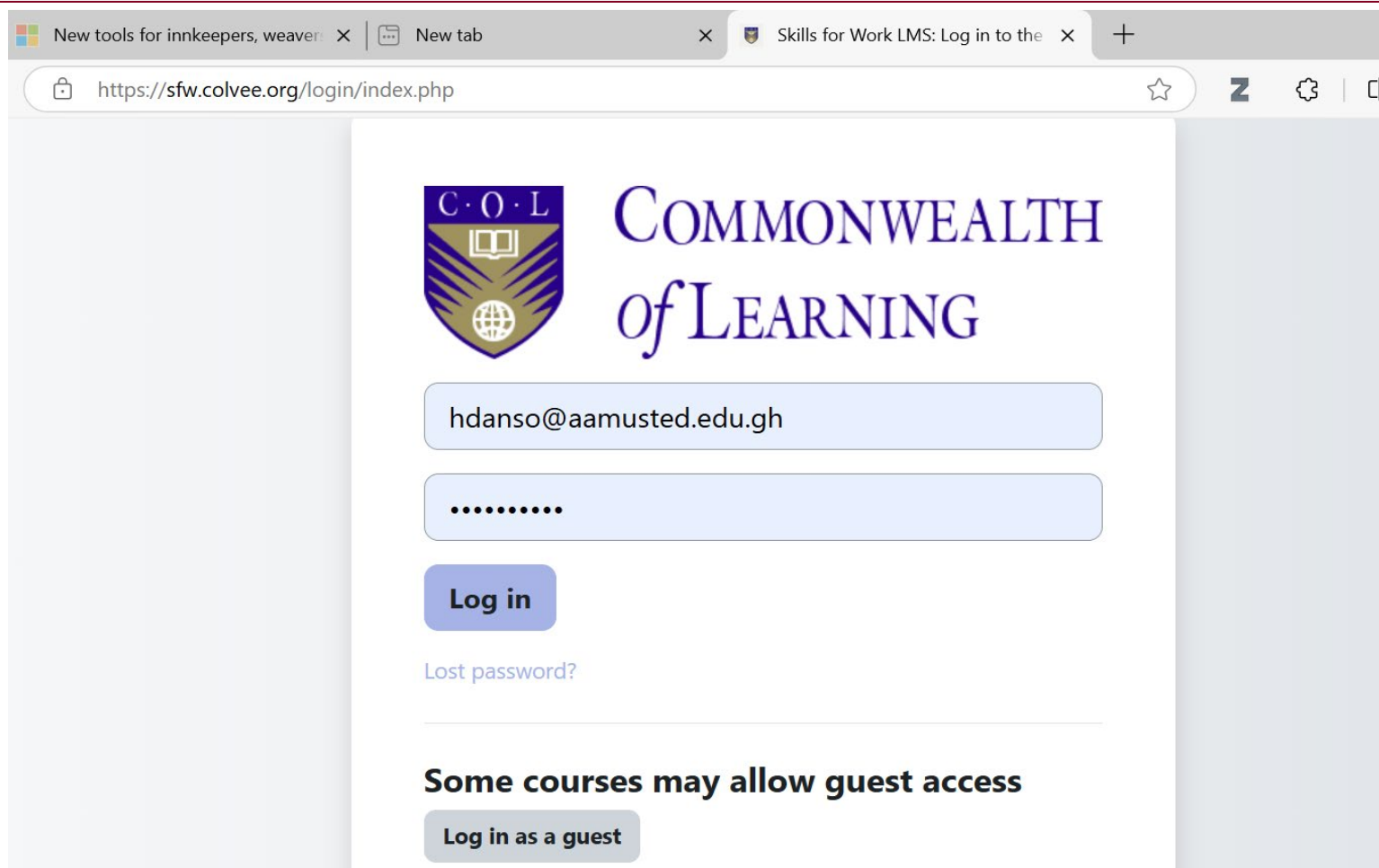
Introduction

- AAMUSTED and COL collaboration
- **Theme:** Strengthening TVET Training through Design and Development of OER Courseware
- **Aim:** To design and development of digital course material (the Courseware) for the diploma in construction technology programme
- Design and develop the **23 Courseware**

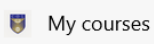


Platform Used

1. COL learning management system (LMS)
2. <https://sfw.colvee.org/login/index.php>



COL LMS

 x  x  x +

 <https://sfw.colvee.org/my/courses.php>     |      

 **COMMONWEALTH
of LEARNING** [Home](#) [Dashboard](#) **[My courses](#)** [All courses](#) [Apply for a Course](#) v [Other Services](#) v [FAQs](#) v  1   v

Welcome back, Prof. Humphrey! 🖐️

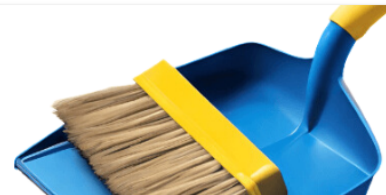
Course overview

All v Search Sort by course name v Card v

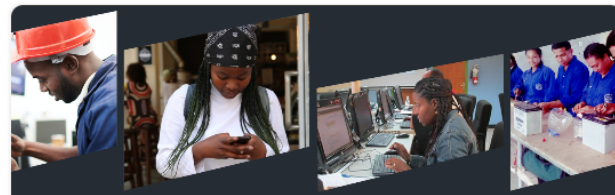


Adapting Virtual Labs in TVET
Delivering Institution Based TVET

15% complete



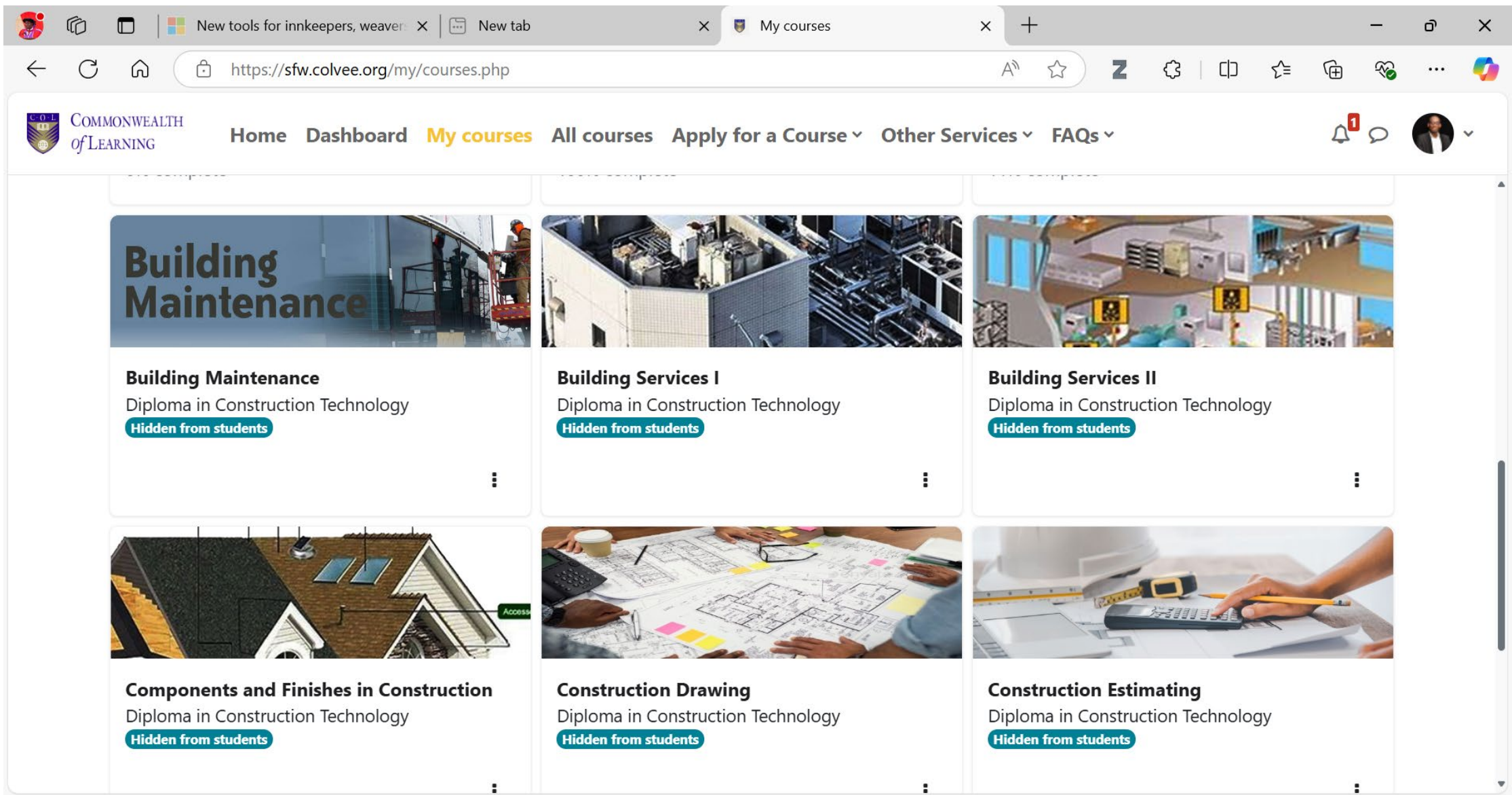
Cleaning equipment
Preparing for Blended TVET



Introduction to blended TVET
Preparing for Blended TVET

100% complete

Developed Courses



The screenshot displays a web browser window with the URL <https://sfw.colvee.org/my/courses.php>. The page header includes the Commonwealth of Learning logo and navigation links: Home, Dashboard, My courses (active), All courses, Apply for a Course, Other Services, and FAQs. A notification bell icon shows 1 alert, and a user profile icon is visible.

The main content area features a grid of six course cards, each with a representative image, a title, a description, and a status label:

- Building Maintenance**
Diploma in Construction Technology
Hidden from students
- Building Services I**
Diploma in Construction Technology
Hidden from students
- Building Services II**
Diploma in Construction Technology
Hidden from students
- Components and Finishes in Construction**
Diploma in Construction Technology
Hidden from students
- Construction Drawing**
Diploma in Construction Technology
Hidden from students
- Construction Estimating**
Diploma in Construction Technology
Hidden from students

Developed Courses

Browser tabs: New tools for innkeepers, weaver: X | New tab | My courses

Address bar: <https://sfw.colvee.org/my/courses.php>

Navigation: Home Dashboard **My courses** All courses Apply for a Course ▾ Other Services ▾ FAQs ▾

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Notification: 1

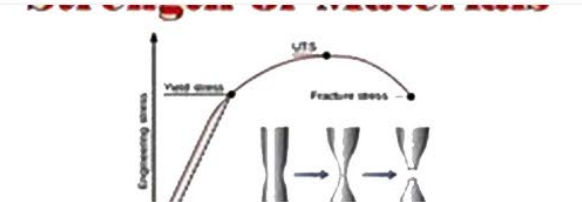
Profile: [User Avatar]



Site Organisation and Procedures
Diploma in Construction Technology
Hidden from students



Strength of Materials 1
Diploma in Construction Technology
Hidden from students



Strength of Materials II
Diploma in Construction Technology
Hidden from students



Substructure Construction
Diploma in Construction Technology
Hidden from students

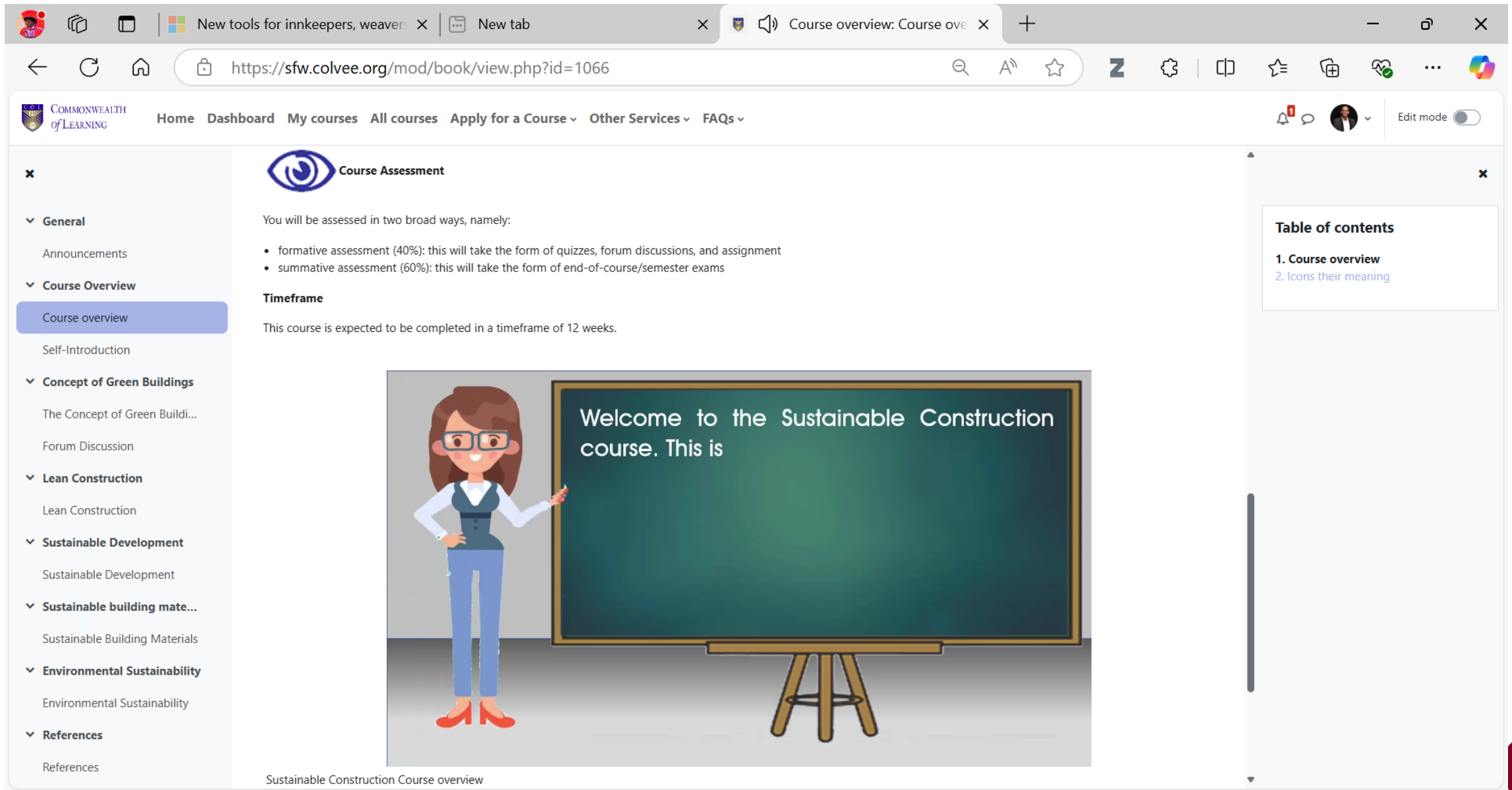


Superstructure Construction
Diploma in Construction Technology
Hidden from students



Sustainable Construction
Diploma in Construction Technology
Hidden from students

Sustainable Construction Course



The screenshot shows a web browser window with the URL <https://sfw.colvee.org/mod/book/view.php?id=1066>. The page is titled "Sustainable Construction Course" and is part of the "COMMONWEALTH of LEARNING" platform. The left sidebar contains a navigation menu with the following items:

- General
 - Announcements
- Course Overview
 - Course overview (selected)
 - Self-Introduction
- Concept of Green Buildings
 - The Concept of Green Buildi...
 - Forum Discussion
- Lean Construction
 - Lean Construction
- Sustainable Development
 - Sustainable Development
- Sustainable building mate...
 - Sustainable Building Materials
- Environmental Sustainability
 - Environmental Sustainability
- References
 - References

The main content area is titled "Course Assessment" and includes the following information:

You will be assessed in two broad ways, namely:

- formative assessment (40%): this will take the form of quizzes, forum discussions, and assignment
- summative assessment (60%): this will take the form of end-of-course/semester exams

Timeframe

This course is expected to be completed in a timeframe of 12 weeks.

Below the text is an illustration of a woman standing next to a chalkboard. The chalkboard text reads: "Welcome to the Sustainable Construction course. This is".

On the right side of the page, there is a "Table of contents" sidebar with the following items:

- 1. Course overview
- 2. Icons their meaning

The page footer indicates the title "Sustainable Construction Course overview".

Sustainable Construction Course

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Home Dashboard My courses All courses Apply for a Course Other Services FAQs

4. Processes of Lean Construction



```

graph TD
    Center((Processes of Lean Construction))
    Center --> 1[1. Find A Change Agent]
    1 --> 2[2. Get The Knowledge]
    2 --> 3[3. Find a Lever]
    3 --> 4[4. Momentarily Forget About The Grand Strategy]
    4 --> 5[5. Map the Value Stream]
    5 --> 6[6. Begin as Soon as Possible]
    6 --> 7[7. Demand Immediate Results]
    7 --> 8[8. Expand Your Scope]
    8 --> Center
  
```

Lean construction is a process and not an event, and therefore the process is very important. The processes of learn construction are as follows:

- 1. Find A Change Agent**

A change agent is someone who makes things happen. Action gives people confidence that changes can occur. The change agent must be true to principle and desist from attempts of diluting lean. People are resistant to change, and therefore the change agent should be firm and not affected by backlash. For instance, lean uses a decentralized decision-making system. Someone opposed to this may equate it as a loss of power, and similar problems may arise when a pull mechanism is used to manage materials.

Sustainable Construction Course

Browser tabs: New tools for innkeepers, weavers X | New tab X | Lean Construction: Quiz 2 X

Address bar: <https://sfw.colvee.org/mod/book/view.php?id=1062&chapterid=2307>

Navigation: Home Dashboard My courses All courses Apply for a Course ▾ Other Services ▾ FAQs ▾

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Left sidebar menu:

- General
 - Announcements
- Course Overview
 - Course overview
 - Self-Introduction
- Concept of Green Buildin...
 - The Concept of Green Bul...
 - Forum Discussion
- Lean Construction
 - Lean Construction
- Sustainable Development
 - Sustainable Development
- Sustainable building mat...
 - Sustainable Building Mater...
- Environmental Sustainab...

Mark as done

Previous Next

6. Quiz 2

 Quiz 2

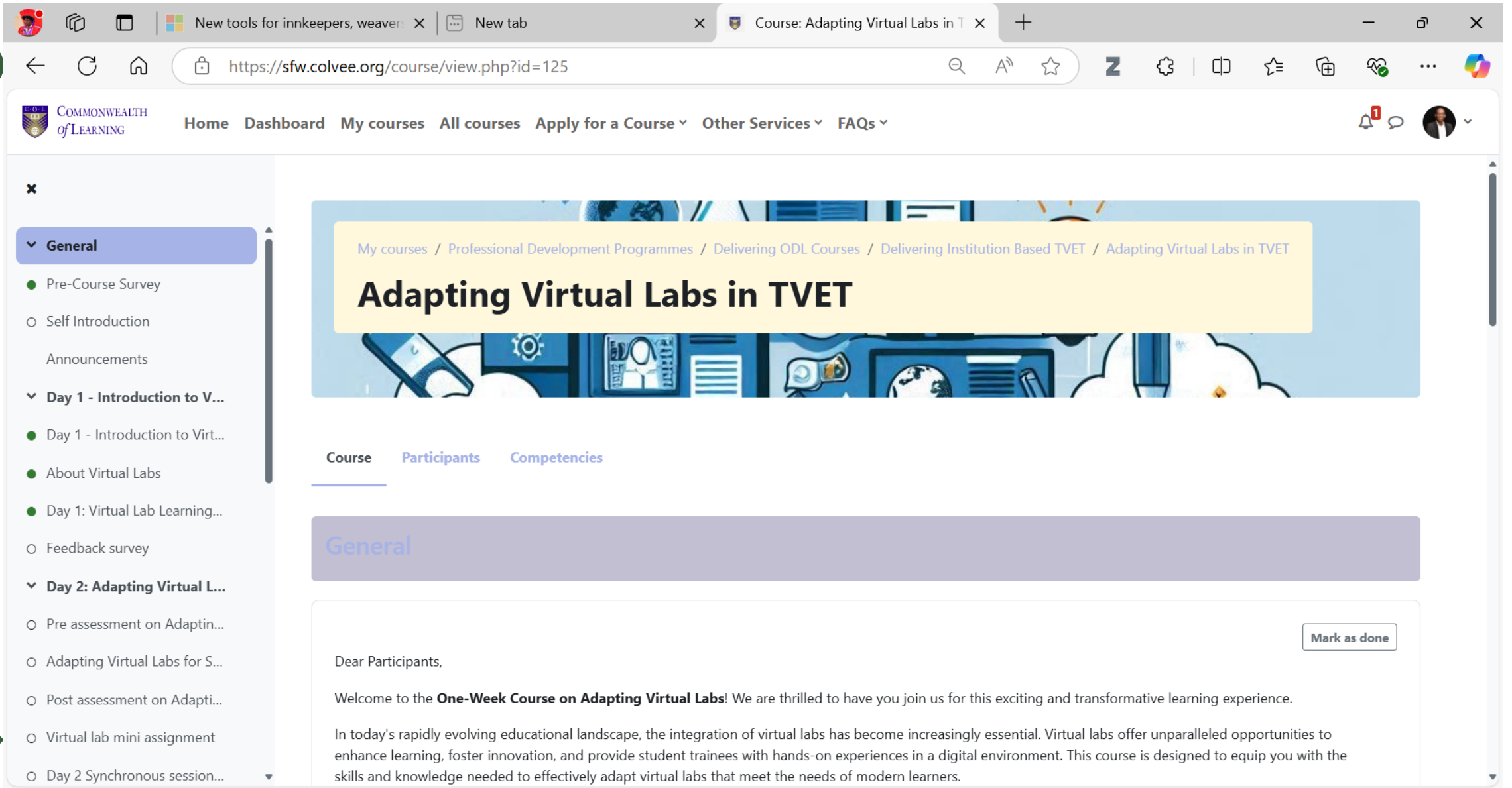
Lean construction aimed at reducing the following, except

- ☐ quality
- ☐ materials
- ☐ cost
- ☐ effort

Check >

Progress indicator: 1 of 5 questions completed

Virtual Lab



The screenshot shows a web browser window with the URL <https://sfw.colvee.org/course/view.php?id=125>. The page is for the Commonwealth of Learning (COL) course "Adapting Virtual Labs in TVET". The left sidebar contains a navigation menu with sections: General (Pre-Course Survey, Self Introduction, Announcements), Day 1 - Introduction to V... (Day 1 - Introduction to Virt..., About Virtual Labs, Day 1: Virtual Lab Learning..., Feedback survey), and Day 2: Adapting Virtual L... (Pre assessment on Adaptin..., Adapting Virtual Labs for S..., Post assessment on Adapti..., Virtual lab mini assignment, Day 2 Synchronous session...). The main content area has a breadcrumb trail: My courses / Professional Development Programmes / Delivering ODL Courses / Delivering Institution Based TVET / Adapting Virtual Labs in TVET. Below this is the course title "Adapting Virtual Labs in TVET" and tabs for Course, Participants, and Competencies. The "General" tab is active, showing a welcome message from the course coordinator. A "Mark as done" button is visible in the top right of the content area.

Commonwealth of Learning

Home Dashboard My courses All courses Apply for a Course Other Services FAQs

My courses / Professional Development Programmes / Delivering ODL Courses / Delivering Institution Based TVET / Adapting Virtual Labs in TVET

Adapting Virtual Labs in TVET

Course Participants Competencies

General

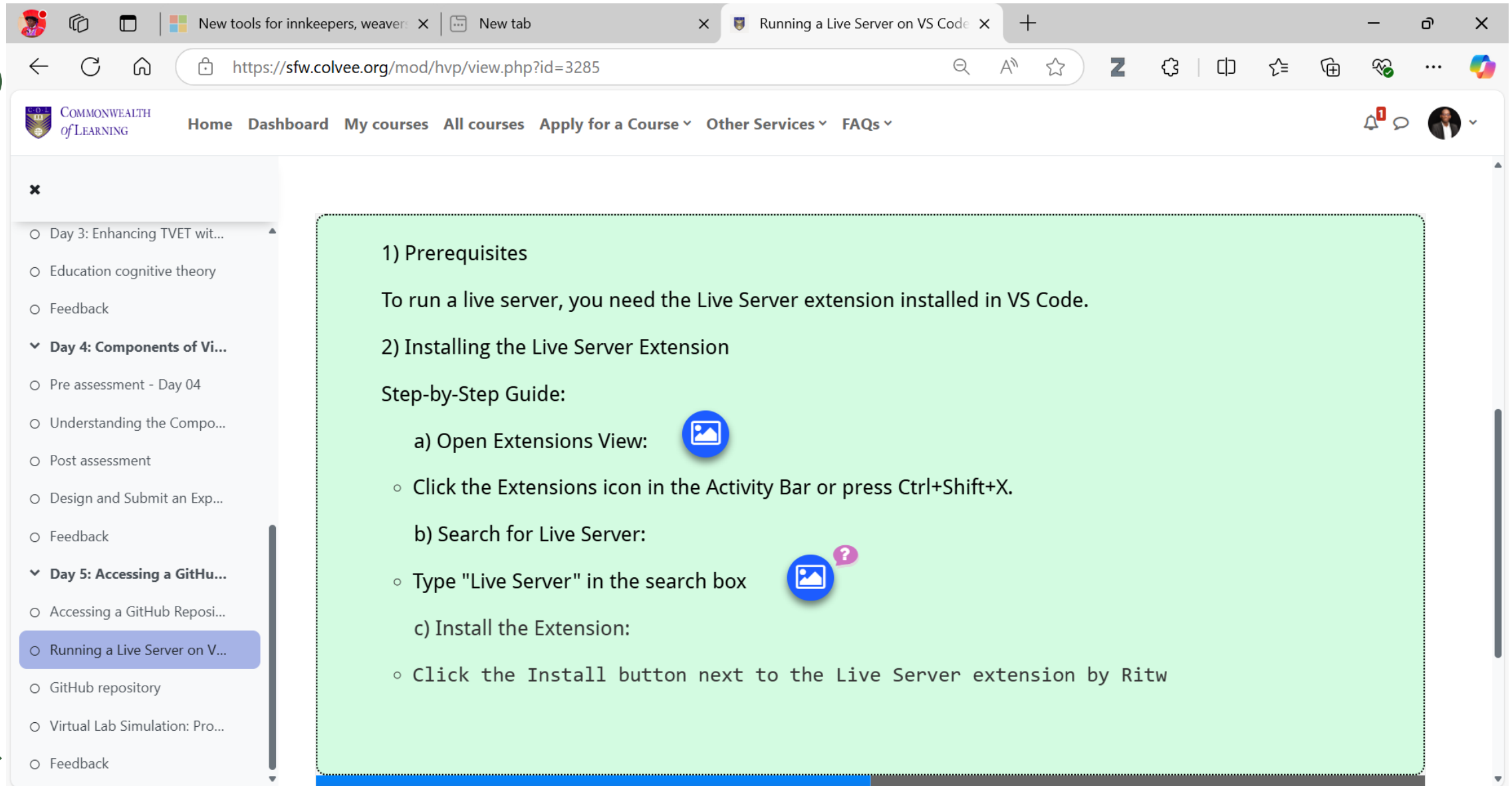
Mark as done

Dear Participants,

Welcome to the **One-Week Course on Adapting Virtual Labs!** We are thrilled to have you join us for this exciting and transformative learning experience.

In today's rapidly evolving educational landscape, the integration of virtual labs has become increasingly essential. Virtual labs offer unparalleled opportunities to enhance learning, foster innovation, and provide student trainees with hands-on experiences in a digital environment. This course is designed to equip you with the skills and knowledge needed to effectively adapt virtual labs that meet the needs of modern learners.

Virtual Lab



The screenshot shows a web browser window with the following elements:

- Browser Tabs:** "New tools for innkeepers, weaver: X", "New tab", "Running a Live Server on VS Code X", and a "+" button to add more tabs.
- Address Bar:** The URL is `https://sfw.colvee.org/mod/hvp/view.php?id=3285`.
- Page Header:** The logo for "COMMONWEALTH of LEARNING" is on the left. Navigation links include "Home", "Dashboard", "My courses", "All courses", "Apply for a Course", "Other Services", and "FAQs". On the right, there are notification and user profile icons.
- Left Sidebar:** A list of course topics. "Day 4: Components of Vi..." is expanded, showing sub-topics like "Pre assessment - Day 04", "Understanding the Compo...", "Post assessment", "Design and Submit an Exp...", "Feedback", and "Day 5: Accessing a GitHub...". The item "Running a Live Server on V..." is highlighted with a blue background.
- Main Content Area:** A light green box contains the following text:
 - 1) Prerequisites**
To run a live server, you need the Live Server extension installed in VS Code.
 - 2) Installing the Live Server Extension**
Step-by-Step Guide:
 - a) Open Extensions View: 
 - Click the Extensions icon in the Activity Bar or press Ctrl+Shift+X.
 - b) Search for Live Server:
 - Type "Live Server" in the search box 
 - c) Install the Extension:
 - Click the Install button next to the Live Server extension by Ritw

Conclusion

- We have completed the development of the courses on the LMS.
- We are currently in the process of converting the practical and experimental aspect of the courses into virtual lab platform.
- The next stop will be to use virtual reality and AI to model the practical and experimental activities.



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