

HCD-201 – Accessibility and Universal Design
Assessment Activity HCD-201:00020
Accessibility Audit

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Introduction

The purpose of this document is to outline a universal design overhaul for Chulalongkorn University's Faculty of Medicine Library's homepage to ensure compliance with the WCAG 2.2 guidelines. This overhaul aims to improve accessibility for people with disabilities while also creating a more modern, user-friendly experience for the general user. The goal is to integrate assistive technology seamlessly while also using design techniques to bridge gaps in accessibility. Below is a list of interventions that would address the identified issues and enhance overall accessibility, usability, and visual appeal. Additionally, information regarding outcomes, resources needed and timeline will also be included.

1. Improve Navigation and Interaction Flow

Ensure a smoother, more accessible navigation experience, especially for users relying on keyboards, screen readers, or other assistive technology.

Interventions:

- The current homepage is cluttered and lacks clear navigation; redesign the homepage to make it cleaner, with clearly defined sections.
 - Outcome: Simplified, intuitive layout, making use of clear headings and organized sections (such as separating search functionality, book categories, and resources).
 - Resources: Web designer, UI/UX designer, front-end developer.
 - Timeline: 4 - 6 weeks.
 - Reasoning: A cleaner layout not only adheres to WCAG but also improves user experience, reducing cognitive load for all users.

- Ensure proper focus order for screen readers and keyboard users.
 - Outcome: Ensure that interactive elements (buttons, links, form fields) are easily navigable using the keyboard or assistive technologies.
 - Resources required: Accessibility specialist, front-end developer.
 - Timeline: 2 - 3 weeks.
 - Reasoning: Enhancing focus management supports accessibility for users with motor impairments and visual disabilities. It also aids screen reader users by maintaining logical reading order.

- Ensure that elements like the search bar and dropdowns have appropriate ARIA labels (e.g., "Search bar," "Search options").
 - Outcome: Elements become clearly identifiable to screen readers and assistive touch technologies.
 - Resources required: Web developer, accessibility specialist.
 - Timeline: 1 week
 - Reasoning: This helps differentiate elements, ensuring users with visual impairments can navigate easily.

Example: The redesigned homepage could include large, well-spaced buttons for navigation, clearly labeled form fields, and a prominent search bar with a “Search” label. The focus ring on buttons and links should be easy to see.

2. Enhance Visual & Structural Accessibility

Make sure the site is visually accessible to users with low vision, color blindness, or cognitive disabilities. Additionally, structure the content in a way that is easy to navigate for screen readers.

Interventions:

- Improve contrast between text and background to meet WCAG 2.2 guidelines.
 - Outcome: Text that is easier to read for people with low vision or color blindness.
 - Resources required: UI/UX designer, front-end developer.
 - Timeline: 2 weeks.
 - Reasoning: Poor contrast between text and background is one of the most common visual accessibility issues. Enhancing contrast makes content legible to a broader audience, including older adults or users with vision impairments.

- Ensure all lists, tables, and headers are properly marked with semantic HTML tags (e.g., <th>, , <table>).
 - Outcome: Clear, readable structure for screen readers.
 - Resources required: Web developer, accessibility specialist.
 - Timeline: 2 - 3 weeks.
 - Reasoning: Proper use of semantic HTML ensures that screen readers can navigate the content effectively, enabling users with visual impairments to understand the structure of the page.

- Ensure all images have meaningful alt text (or the role="none" attribute for decorative images).
 - Outcome: Users with visual impairments can understand the content of images.
 - Resources required: Content writer, web developer.
 - Timeline: 2 weeks.
 - Reasoning: Alt text provides context to users who rely on screen readers, ensuring that images are accessible.

Example: The site should employ color schemes that adhere to WCAG standards, such as dark text on a light background (or vice versa) to ensure readability. Images should have descriptive alt text like “Photo of the library’s new entrance” or, for decorative images, use role="none".

3. Implement Responsive Design

Ensure the website works well on both large screens and mobile devices, with particular attention to screen resizing, text size, and image scaling.

Interventions:

- Redesign the website to be fully responsive, ensuring elements adapt to different screen sizes and resolutions.

- Outcome: Improved mobile experience, with no overlapping content or small fonts.
 - Resources required: Web designer, front-end developer.
 - Timeline: 4 weeks.
 - Reasoning: A responsive design ensures that users on mobile devices have a good experience. It avoids issues like overlapping content, which can render the site inaccessible for mobile users, especially those with low vision.
- Allow users to adjust text size without breaking the page layout.
 - Outcome: Ensure that users with visual impairments or those who need larger text can read the website comfortably.
 - Resources required: Front-end developer, UI/UX designer.
 - Timeline: 2 weeks.
 - Reasoning: Text scaling ensures accessibility for users who need larger text but without disrupting the page layout or functionality.

Example: A responsive layout would ensure that the navigation bar collapses into a mobile-friendly menu on smaller screens, the font size adjusts accordingly, and images resize without losing quality.

4. Assistive Technology Compatibility

Objective: Ensure the website works seamlessly with assistive technology like screen readers, keyboard navigation, and voice commands.

Interventions:

- Improve compatibility with screen readers by ensuring proper labeling and logical flow of content.
 - Outcome: Content is read correctly by screen readers without confusion or missing information.
 - Resources required: Accessibility specialist, front-end developer.
 - Timeline: 2 - 3 weeks.
 - Reasoning: Screen reader compatibility is a core component of web accessibility. Without proper labels and logical structure, screen readers fail to convey information correctly.
- Implement keyboard shortcuts for navigating key areas of the website.
 - Outcome: Easier navigation for users who cannot use a mouse.
 - Resources required: Web developer, accessibility specialist.
 - Timeline: 1 - 2 weeks.
 - Reasoning: Keyboard shortcuts improve usability for users with motor impairments, allowing them to navigate more efficiently.

Example: For screen reader users, each element such as buttons and links should be properly labeled with ARIA attributes, such as, `aria-label="Search"`, and the navigation flow should be logical and sequential.

5. Content Simplification and Clarity

Reduce cognitive load and make the content more understandable, especially for users with cognitive disabilities.

Interventions:

- Reduce text clutter and simplify language. For instance, break large blocks of text into digestible sections and use headings to guide the user.
 - Outcome: Clear, easy-to-understand content that improves the cognitive accessibility of the site.
 - Resources required: Content writer, UX/UI designer.
 - Timeline: 3 weeks.
 - Reasoning: Simple and concise content improves accessibility for users with cognitive impairments or low literacy levels.

- Ensure that any interactive elements (forms, search bars, etc.) have clear, concise instructions or error messages.
 - Target outcome: Users know exactly how to interact with the site and what to expect from different actions.
 - Resources required: Content writer, accessibility specialist.
 - Timeline: 1 - 2 weeks.
 - Reasoning: Clear instructions reduce confusion and improve the user experience.

Example: Instead of overwhelming users with too much information on the homepage, the site could have a simple, categorized list of library resources, with clear descriptions of what each category contains.

Summary and Conclusion

By implementing these interventions, the Chulalongkorn University's Faculty of Medicine Library's homepage will not only meet WCAG 2.2 compliance but will also create a better overall experience for all users. Each change addresses a specific accessibility issue identified in the audit, and by combining thoughtful design choices with appropriate technical solutions, the website will become more inclusive, easier to navigate, and more user-friendly. This approach to web accessibility will benefit users with disabilities, and enhance the user experience for everyone.