

SBYEC-Website Upgrade

Project Requirements and Specifications

Silver Buckle Youth Equestrian Center



Silver Buckle Tech



SILVER BUCKLE TEC

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I. Introduction

Silver Buckle Youth Equestrian Center (SBYEC) is a nonprofit that offers riding lessons, youth programs, and community events. The website is the primary means by which families stay informed about what's happening at the ranch. A student team modernized the WordPress site [1] last year, but some key features were left unfinished, and staff still find updates hard to manage on their own.

Our project aims to enhance the site's functionality, ease of use, and sustainability. We'll improve the event calendar [2], link event pages to Zeffy for ticket purchases [3], expand lesson and sponsor pages, embed SBYEC's social feed [4], and simplify day-to-day content updates for non-technical staff. We'll also strengthen security and accessibility with HTTPS and WCAG compliance [4]. By the semester's end, we aim to deliver a well-structured, maintainable site that empowers staff and provides visitors with clear, engaging, and accessible information.

II. System Requirements Specification

This section outlines the key functional and non-functional requirements, use cases, user stories, and traceability matrix for the Silver Buckle Youth Equestrian Center (SBYEC) Website Enhancement Project. It provides a comprehensive overview of the system's goals, behavior, and user interactions.

II.1. Functional Requirements

Each functional requirement is listed below, accompanied by a detailed description, source, and priority level.

II.1.1 Event Management

| | |
|------------------------|---|
| Functional Requirement | [FR-1] Calendar Display |
| Description | The system must provide a readable calendar that allows staff to add and update events [2]. |
| Source | Client request |
| Priority | Level 0 (Essential) |

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| Functional Requirement | [FR-2] Event Details |
| Description | The system must allow each event to link to a dedicated detail page [2]. |
| Source | Client request |
| Priority | Level 0 (Essential) |

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|------------------------|---|
| Functional Requirement | [FR-3] Ticket Purchase |
| Description | The system must include secure ticket purchase links via Zeffy [3] (or other approved payment methods). |

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| Source | Client request |
| Priority | Level 0 (Essential) |

II.1.2 Content and Social Media Management

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| Functional Requirement | [FR-4] Facebook Feed Integration |
| Description | The system must embed SBYEC's Facebook feed [4] on the homepage. |
| Source | Sponsor request |
| Priority | Level 1 (Desirable) |

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|------------------------|---|
| Functional Requirement | [FR-5] Lesson Pages |
| Description | The system must enable structured subpages for different lesson types (Rising Stars, Private Lessons, Group Lessons). |
| Source | Sponsor request |
| Priority | Level 0 (Essential) |

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|------------------------|--|
| Functional Requirement | [FR-6] Staff Updates |
| Description | Admins must be able to easily update the About/Team and Sponsor/Partner pages. |
| Source | Client request |
| Priority | Level 0 (Essential) |

II.1.3 User Interaction

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|------------------------|---|
| Functional Requirement | [FR-7] Contact Forms |
| Description | Customers must be able to submit inquiries via contact forms; submissions are delivered to SBYEC's email. |
| Source | Client request |
| Priority | Level 0 (Essential) |

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|------------------------|--|
| Functional Requirement | [FR-8] Newsletter Signup |
| Description | Customers must be able to sign up for a newsletter and receive a confirmation [5]. |
| Source | Client request |
| Priority | Level 1 (Desirable) |

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|------------------------|--|
| Functional Requirement | [FR-9] WordPress Management |
| Description | Admins must be able to log in to WordPress and update website content. |
| Source | Client request |
| Priority | Level 0 (Essential) |

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|------------------------|--|
| Functional Requirement | [FR-10] AI Chatbot |
| Description | Customers must be able to ask common questions on the website and receive pre-defined responses. |
| Source | Team suggestion / Client interest |
| Priority | Level 1 (Desirable) |

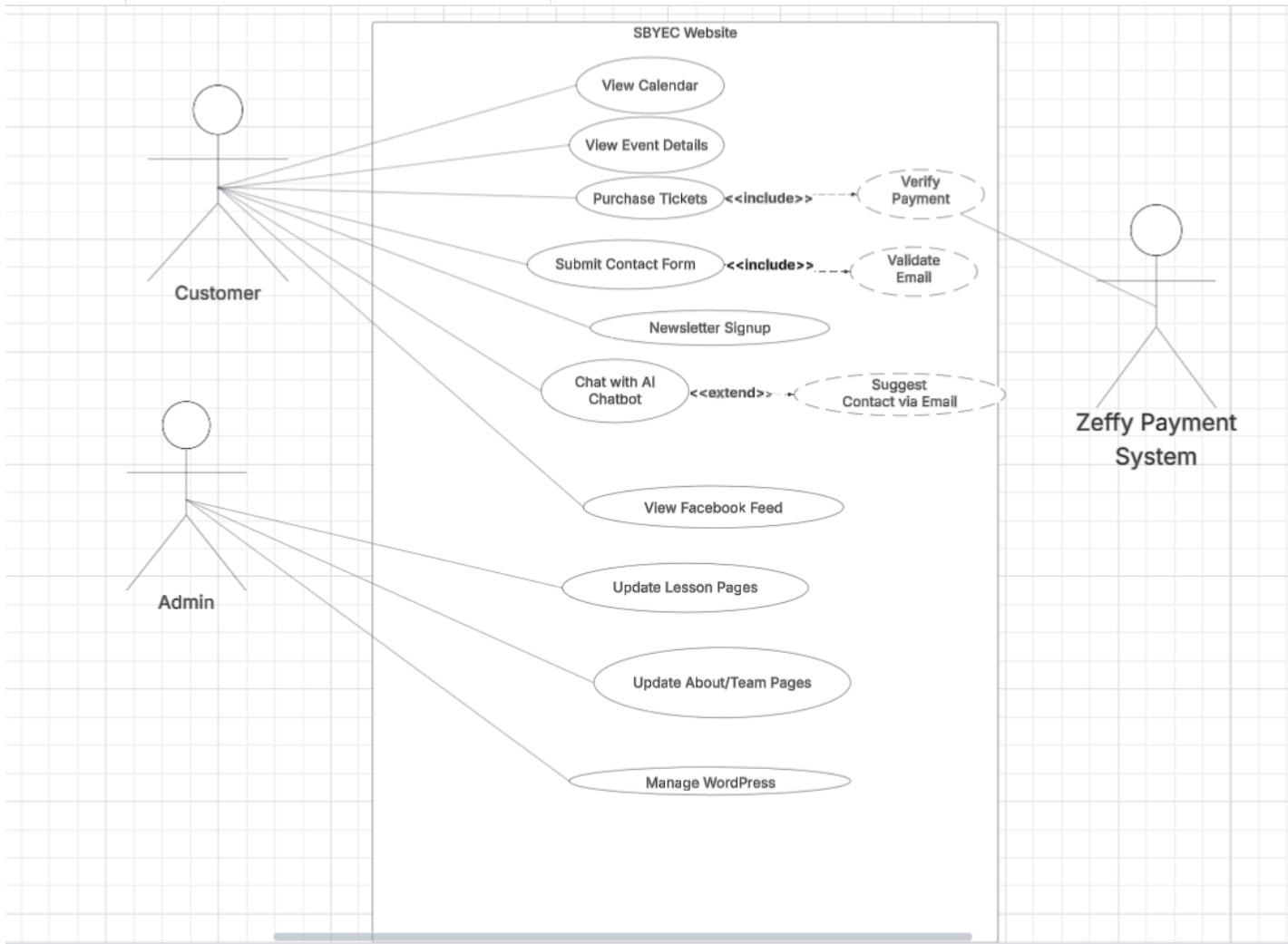
II.2. Non-Functional Requirements

The non-functional requirements outline the system's operational qualities, such as performance, accessibility, and security, to ensure it meets quality standards beyond core functionality.

| Non-Functional Requirement | Description | Verification method |
|----------------------------|--|--|
| [NFR-1] Performance | The website shall load the homepage within 3 seconds under normal broadband conditions. | validated using GTmetrix and browser Performance panel; homepage LCP ≤ 3s under normal broadband |
| [NFR-2] Availability | The website shall maintain at least 99% uptime during the project semester. | monitored via hosting uptime monitor; goal ≥ 99% during semester |
| [NFR-3] Responsiveness | The website shall display correctly on desktop, tablet, and mobile devices. | checked on desktop/tablet/phone breakpoints; no layout overflow |
| [NFR-4] Chatbot Accuracy | The AI chatbot shall answer 90% of basic user questions with correct predefined responses. | manual test set of FAQs; ≥ 90% correct response |
| [NFR-5] Usability | Staff with minimal training shall be able to update pages via WordPress. | 2 staff run-throughs; publish/edit flow ≤ 10 minutes without training |
| [NFR-6] Security | All forms and admin logins shall use HTTPS encryption. | enforced via HTTPS/TLS; certificate validity checked on forms and admin login |
| [NFR-7] Accessibility | The website shall follow WCAG 2.2 AA accessibility guidelines. | audited with Lighthouse/axe-core; color contrast ≥ 4.5:1; focus order/keyboard navigation verified |

II.3. Use Cases

The use cases describe common scenarios of user interactions with the system, explaining how functional requirements are applied in specific situations.



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| Use Case | UC1-View Calendar Events |
| Actors | Customer |
| Pre-condition | User is on the homepage. |
| Post-condition | The monthly calendar is displayed (or shows 'No events scheduled this month'). |
| Main Flow | <ul style="list-style-type: none"> - Click on 'Calendar' - System shows a monthly view with scheduled events |
| Alternative Flow | <ul style="list-style-type: none"> - No events for month -> Show message 'No events scheduled this month' |
| Related Requirements | FR-1, FR-2 |

| | |
|----------------|---|
| Use Case | UC2-Purchase Event Tickets |
| Actors | Customer |
| Pre-condition | User is viewing an event detail page. |
| Post-condition | The ticket purchase is confirmed, and an acknowledgment is displayed. |

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| Main Flow | <ul style="list-style-type: none"> - Click 'Buy Tickets' - Redirect to Zeffy for secure payment - System shows confirmation |
| Alternative Flow | <ul style="list-style-type: none"> - Payment fails -> Show error 'Payment could not be processed, please try again' |
| Related Requirements | FR-3 |

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|----------------------|--|
| Use Case | UC3-Update Website Content |
| Actors | Staff (Admin) |
| Pre-condition | Admin is logged into WordPress. |
| Post-condition | Updated content appears on the live website. |
| Main Flow | <ul style="list-style-type: none"> - Open About/Team page - Edit content - Click 'Save' |
| Alternative Flow | <ul style="list-style-type: none"> - Required fields blank -> Show 'Please complete all required fields' |
| Related Requirements | FR-6, FR-9 |

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|----------------------|--|
| Use Case | UC4-View Facebook Feed |
| Actors | Customer |
| Pre-condition | User is on the homepage. |
| Post-condition | Latest Facebook posts are displayed on the homepage feed. |
| Main Flow | <ul style="list-style-type: none"> - Homepage loads embedded Facebook feed |
| Alternative Flow | <ul style="list-style-type: none"> - No recent posts -> Show message 'No recent updates available' |
| Related Requirements | FR-4 |

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|----------------------|---|
| Use Case | UC5-Newsletter Signup |
| Actors | Customer |
| Pre-condition | User is on the homepage. |
| Post-condition | Subscription confirmation is displayed (and an email is sent if configured). |
| Main Flow | <ul style="list-style-type: none"> - Enter a valid email - Click 'Subscribe' - System confirms 'Subscription successful' |
| Alternative Flow | <ul style="list-style-type: none"> - Invalid email -> Show 'Please enter a valid email address' |
| Related Requirements | FR-8 |

| | |
|----------|-------------------------|
| Use Case | UC6-Submit Contact Form |
| Actors | Customer |

| | |
|----------------------|--|
| Pre-condition | User is on the Contact Us page. |
| Post-condition | Inquiry is delivered to SBYEC's email; confirmation message displayed. |
| Main Flow | <ul style="list-style-type: none"> - Enter name, email, message - Click 'Submit' - System confirms submission |
| Alternative Flow | - Email missing -> Show 'Email is required' |
| Related Requirements | FR-7 |

| | |
|----------------------|--|
| Use Case | UC7-Chat with AI Chatbot |
| Actors | Customer |
| Pre-condition | User is on the homepage. |
| Post-condition | User receives an answer or instruction to contact via email. |
| Main Flow | <ul style="list-style-type: none"> - Type a fundamental question - Chatbot responds with a stored answer |
| Alternative Flow | - Question not in knowledge base -> 'I'm not sure, please contact us by email' |
| Related Requirements | FR-10 |

II.4. User Stories

- User Story US1: View Calendar

As a customer, I want to view a calendar of events so that I can see upcoming activities at SBYEC.

Feature: Calendar

Scenario: Customer views the monthly calendar

Given the customer is on the homepage

When they click on 'Calendar'

Then the monthly calendar view should be displayed

- User Story US2: Purchase Tickets

As a customer, I want to buy tickets through a secure link so that I can register for events conveniently.

Feature: Ticket Purchase

Scenario: Successful ticket purchase

Given the customer is on an event detail page

When they click 'Buy Tickets' and complete payment

Then a purchase confirmation should be displayed

- User Story US3: Update Content

As an admin, I want to update the About/Team page so that the site shows the correct staff team.

Feature: Content Update

Scenario: Admin updates About page

Given the admin is logged in

When they edit the About page and click 'Save'

Then the updated information should appear on the live website

- User Story US4: Contact Form Submission

As a customer, I want to submit an inquiry through a contact form so that I can ask questions without having to call.

Feature: Contact Form

Scenario: Valid form submission

Given the customer is on the Contact Us page

When they enter a valid name, email, and message and click 'Submit'

Then they should see a confirmation message and the inquiry should be delivered to SBYEC's email

II.5. Traceability Matrix

The table below maps functional requirements to their respective use cases and user stories.

| Functional Requirement | Use Case | User Story | Priority | Related NFR |
|--------------------------------|----------|-----------------------|----------|---------------------|
| FR-1 Calendar Display | UC1 | US1: View Calendar | Level 0 | NFR-1, NFR-3, NFR-7 |
| FR-2 Event Details | UC1 | US1: View Calendar | Level 0 | NFR-1, NFR-3, NFR-7 |
| FR-3 Ticket Purchase | UC2 | US2: Purchase Tickets | Level 0 | NFR-3, NFR-7 |
| FR-4 Facebook Feed Integration | UC4 | — | Level 1 | NFR-1, NFR-3, NFR-7 |
| FR-5 Lesson Pages | — | — | Level 0 | NFR-1, NFR-3, NFR-7 |
| FR-6 Staff Updates | UC3 | US3: Update Content | Level 0 | NFR-5, NFR-6 |

| | | | | |
|---------------------------|-----|------------------------------|---------|----------------------------|
| FR-7 Contact Forms | UC6 | US4: Contact Form Submission | Level 0 | NFR-3, NFR-6, NFR-7 |
| FR-8 Newsletter Signup | UC5 | — | Level 1 | NFR-3, NFR-6, NFR-7 |
| FR-9 WordPress Management | UC3 | US3: Update Content | Level 0 | NFR-5, NFR-6 |
| FR-10 AI Chatbot | UC7 | — | Level 1 | NFR-1, NFR-3, NFR-4, NFR-7 |

II.6. Standards and Compliance

This project complies with established technical and ethical standards. Because the SBYEC website is built entirely on WordPress and community plugins—without custom backend code—our compliance emphasizes configuration, verification, and maintainable content practices instead of application-level source code changes.

| Standard / Guideline | Domain | Description | Application in Project |
|--|------------------------|--|---|
| IEEE 830 – Software Requirements Specification (1998) | Software documentation | Defines SRS structure and traceability across FR/NFR, use cases, and tests. | We organized FR/NFR, use cases, and the traceability matrix according to IEEE 830 [1]; each requirement is uniquely numbered and traceable to UC/US (see Section II.5). |
| W3C WCAG 2.2, Level AA (2023) | Accessibility | Criteria for color contrast, keyboard navigation, and alternatives for non-text content. | Pages and templates include alt text; color contrast targets $\geq 4.5:1$; keyboard access verified on main navigation. Audited with Lighthouse/axe-core (see Verification notes below) [4]. |

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| HTTPS / TLS 1.3 | Web security | Encrypted transport for forms and admin logins. | Enforced site-wide SSL; admin and all forms are served via HTTPS [4] (browser certificate lock verified). |
| ACM Code of Ethics (2018) | Professional practice | Fairness, privacy, transparency in computing practice. | No unnecessary data collection; contact is email-based; newsletter sign-up uses explicit consent language. |

Verification Methods and Evidence (summary)

- **Accessibility (WCAG 2.2 AA):** Google Lighthouse (v12) desktop audits on Home, Lessons, and All Events; accessibility score ≥ 90; manual checks for alt text and focus order.
- **Security (HTTPS):** Valid certificate lock icon shown on all forms and wp-admin login screen; SSL plugin enabled with auto-renew.
- **Documentation Quality (IEEE 830):** FR/NFR numbering and UC/US mappings maintained in the traceability matrix; all requirements are uniquely identified.

III. System Evolution

The site remains on the existing WordPress stack; hosting performance and transport-level security are controlled by the hosting provider and WordPress core/plugins rather than by custom code.

- Assumptions: Site remains on WordPress; content editors are non-technical; donations/ticketing routed to third-party (e.g., Zeffy/Zelle/Venmo) [3].
- Anticipated Changes:
 1. Plugin policy/price updates may affect features or embedding;
 2. Third-party availability (Zeffy/Facebook) [4] may change link flows or widgets;
 3. Staff turnover could require lighter training materials and role-based access.
- Risks / Change Points: If selected plugins [1] become unsupported or incompatible after a WP core update, we must either (a) pin versions and test before upgrading, or (b) swap plugins and re-map content within 1–2 sprints

IV. Glossary

- WordPress: A CMS used to manage and publish website content.
- The Events Calendar: A WordPress plugin family for calendars and event detail pages.
- Zeffy: A zero-fee fundraising/ticketing platform commonly used by nonprofits.
- WCAG 2.2 AA: Web Content Accessibility Guidelines (level AA) for accessible design.
- Uptime: Percentage of time a site is operational and reachable over a period.
- Predefined Responses (Chatbot) : A small, curated FAQ set used to auto-answer common questions without collecting user data.

V. References

- [1] WordPress.org, “Roles and Capabilities,” Accessed: Sep. 13, 2025. [Online]. Available: <https://wordpress.org/documentation/article/roles-and-capabilities/>
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