Software Requirements Specification

for

UPOD - Web Design

**Version 0.1**

**Prepared by Tom West**

**Wilfrid Laurier University, CP317**

**25/05/2016**

**Table of Contents**

[**1. Introduction** 3](#_Toc452061674)

[1.1 Purpose 3](#_Toc452061675)

[1.2 Product Scope 3](#_Toc452061676)

[**2. Overall Description** 4](#_Toc452061677)

[2.1 Product Perspective 4](#_Toc452061678)

[2.2 Product Functions 4](#_Toc452061679)

[2.3 User Classes and Characteristics 4](#_Toc452061680)

[2.4 Operating Environment 4](#_Toc452061681)

[2.5 Design and Implementation Constraints 4](#_Toc452061682)

[2.6 User Documentation 5](#_Toc452061683)

[2.7 Assumptions and Dependencies 5](#_Toc452061684)

[**3. External Interface Requirements** 6](#_Toc452061685)

[3.1 User Interfaces 6](#_Toc452061686)

[3.2 Hardware Interfaces 6](#_Toc452061687)

[3.3 Software Interfaces 6](#_Toc452061688)

[3.4 Communications Interfaces 6](#_Toc452061689)

[**4. System Features** 7](#_Toc452061690)

[4.1 Landing Page 7](#_Toc452061691)

[4.2 Portal Page 8](#_Toc452061692)

[4.3 Single Entry Page (Scalable and Duplicable) 8](#_Toc452061693)

[4.4 About Us Page 9](#_Toc452061694)

[4.5 Admin Login Page 10](#_Toc452061695)

[4.6 Search Results Page 10](#_Toc452061696)

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason for Changes** | **Version** |
| Tom West | 25/05/16 | Filling out Section 2 & Minor Edits to High Level Requirements. | v0.3 |
| Tom West | 17/05/16 | Functional Requirements Draft Complete. Adding High Level Requirements Draft. | v0.2 |
| Tom West | 13/05/16 | Initial Draft | v0.1 |

# Introduction

## Purpose

*This collection of requirement documents outlines the visual and functional design choices made in order to update the Laurier UPOD site. The UPOD site should:*

1. *Contain all relevant (accurate) information a first year physics undergraduate student would need to access in reference to their courses.*
2. *Be easy to navigate, as students generally stop looking unless information is easily available*
3. *Be responsive, as students generally are on tight timelines, and don’t have time for sites to load slowly.*

## Product Scope

*UPOD (Undergraduate Physics Online Database) is a website designed to the students with information about physics. The goal is to provide accurate and up to date physics knowledge for undergraduate students. There are currently very few quality physics reference sites, so UPOD has the opportunity to fill a large gap facing physics students at present.*

# Overall Description

## Product Perspective

*<Describe the context and origin of the product being specified in this SRS. For example, state whether this product is a follow-on member of a product family, a replacement for certain existing systems, or a new, self-contained product. If the SRS defines a component of a larger system, relate the requirements of the larger system to the functionality of this software and identify interfaces between the two. A simple diagram that shows the major components of the overall system, subsystem interconnections, and external interfaces can be helpful.>*

## Product Functions

*The Web Design must allow students to navigate UPOD quickly*

*<Summarize the major functions the product must perform or must let the user perform. Details will be provided in Section 3, so only a high level summary (such as a bullet list) is needed here. Organize the functions to make them understandable to any reader of the SRS. A picture of the major groups of related requirements and how they relate, such as a top level data flow diagram or object class diagram, is often effective.>*

## User Classes and Characteristics

*The primary users of UPOD will be undergrad students in physics classes.*

*<Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the most important user classes for this product from those who are less important to satisfy.>*

## Operating Environment

*The UPOD website will be hosted on the Wilfrid Laurier University Hopper server. All data must be stored locally, and search functions will be supported by the database structure.*

## Design and Implementation Constraints

*UPOD front end will be maintained by Wilfrid Laurier staff after the end of the Spring 2016 school term. (July 26, 2016) As such, the admin portal must be functional by this date. Only specified staff may be allowed administrator access. The individuals are as follows:* insert list here

*<Describe any items or issues that will limit the options available to the developers. These might include: corporate or regulatory policies; hardware limitations (timing requirements, memory requirements); interfaces to other applications; specific technologies, tools, and databases to be used; parallel operations; language requirements; communications protocols; security considerations; design conventions or programming standards (for example, if the customer’s organization will be responsible for maintaining the delivered software).>*

## User Documentation

*<List the user documentation components (such as user manuals, on-line help, and tutorials) that will be delivered along with the software. Identify any known user documentation delivery formats or standards.>*

## Assumptions and Dependencies

*<List any assumed factors (as opposed to known facts) that could affect the requirements stated in the SRS. These could include third-party or commercial components that you plan to use, issues around the development or operating environment, or constraints. The project could be affected if these assumptions are incorrect, are not shared, or change. Also identify any dependencies the project has on external factors, such as software components that you intend to reuse from another project, unless they are already documented elsewhere (for example, in the vision and scope document or the project plan).>*

# External Interface Requirements

## User Interfaces

*<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>*

## Hardware Interfaces

*<Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.>*

## Software Interfaces

*<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>*

## Communications Interfaces

*<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>*

# System Features

## Landing Page

4.1.1 Description

The UPOD landing page is the first thing students will see when accessing UPOD. The UPOD design philosophy is to encourage users to search the site quickly - the focus on and size of the search bar on the landing page will promote a quick search to whatever term the student is looking for. Think of the Google Search page for a similar product.

A permanent link back to the main landing page is common on many sites, as is a left side menu. Students will be familiar with sites like Wikipedia and Google Scholar, so a similar design philosophy should be employed for similar educational tools. Further, by hiding the contents of the left side menu, users will be more likely use the search bar to initially search the site.

4.1.2 Functional Requirements

4.1.2.1: The UPOD logo and search bar must be displayed in the main content panel of the landing page. The search bar will take up 75% of the width of the page, and must be centered. The UPOD logo must be displayed above the search bar.

4.1.2.2: The top bar must contain the UPOD logo, which should act as a hyperlink directing the user to the landing page. This logo and its functionality will remain the same across each page within the UPOD site.

4.1.2.3: The top bar must also contain a menu button, displayed at the top left of the page. (Logo will be displayed directly to the right of the menu button) The menu button will be displayed as a “hamburger style” button.

4.1.2.4: Upon clicking the menu button, a menu bar must slide in from the left of the screen. The menu bar must be n pixels wide.

4.1.2.5: The menu bar must include links to each of the six main physics disciplines covered on the UPOD site:

* Fundamentals of Physics
* Classical Mechanics
* Optics
* Electricity and Magnetism
* Quantum Mechanics
* Statistical Mechanics

4.1.2.6: Site admins must be able to add additional disciplines to the site at their discretion, and the appropriate discipline title must be added to the menu bar.

4.1.2.7: There must be a bar at the bottom of the landing page that only become visible once the user scrolls. The bar should contain legal jargon.

## Portal Page

* + 1. Description

For users who prefer to navigate the site rather than using the search bar, links to each of the main physics disciplines in the menu bar will direct users to a portal page for each discipline.

Each Portal Page will continue to carry through the left side menu, and should also display a search bar in the top right hand corner, which should have the same functionality as the landing page search bar. Portal Pages will display info in two vertical panels – the left panel should display the title of the discipline as well as a brief description of the discipline (i.e. Fundamentals of Physics includes topics such as calculus, vectors, and the groundwork you will need to continue learning Physics at the undergrad level. – as found on the current UPOD site) The right panel will list out topics in a similar manner to the content listed in each category of the current UPOD side (i.e. Commonly Used Constants, Unit Conversions, etc. – with respect to Fundamentals of Physics)

4.2.2 Functional Requirements

4.2.2.1: The content area of this page must be split into two vertical columns.

4.2.2.2: The name of the physics discipline should be displayed centered in the right column in font at size, with a brief description below in font at size.

4.2.2.3: The left column should contain a list of topics within the given discipline. Topics should be organized by criteria.

4.2.2.4: Each topic should be described by a title in font at size, as well as a few main headings listed beneath the title in font at size.

4.2.2.5: The left column must be vertically scrollable.

4.2.2.6: The UPOD logo and menu must remain visible at the top left of the page

4.2.2.7: The Search Bar must remain visible at the top of the page. (right aligned)

## Single Entry Page (Scalable and Duplicable)

4.3.1 Description

Single Entries will make up the vast majority of the content on the UPOD site. Each concept or law will have its own Single Entry page, which will display background info, important formulas, and link users to relevant information. Relevant links will be displayed at the bottom of the page, similar to the “See Also” section near the bottom of Wikipedia pages.

As usual, left side menu and top right search bar should be available for site navigation.

4.3.2 Functional Requirements

4.3.2.1: There must be a replicable template for this page in order for admins to add new content to the UPOD site.

4.3.2.2: The title of the page must be font at size.

4.3.2.3: Any subheadings on this page must be font at size.

4.3.2.4: Descriptive text must be font at size.

4.3.2.5: There must be only one main title per page. There is no minimum number of subheadings, but each subheading must outline a unique concept, and the text displayed under each subheading must relate to said concept.

4.3.2.6: The bottom of the page must display a “Suggestions” section with links to relevant content. This section will only be displayed once the user scrolls downwards.

4.3.2.7: The UPOD logo and menu must remain visible at the top left of the page

4.3.2.8: The Search Bar must remain visible at the top of the page. (right aligned)

## About Us Page

4.4.1 Description

Users should be able to contact UPOD Admin by email to report missing, incorrect, or broken content.

As usual, left side menu and top right search bar should be available for site navigation.

4.4.2 Functional Requirements

4.4.2.1: The About Us page should be a modified form of the Single Entry Page. The page title must be “About Us” in font at size.

4.4.2.2: Text following the title should outline the purpose and origin of the UPOD website, and must be displayed in font at size.

4.4.2.3: Following the description must be a subheading - “Contact Us”

4.4.2.4: After the subheading, there must be 3 text boxes, each of which is to be displayed on its own line:

* A single line text box titled “Name”
* Another single line text box titled “Title”
* A multi-line and scalable text box titled “Comments”

4.4.2.5: Underneath the three text boxes must be a button titled “Send.” Clicking on the button must send the comments to email address. The sender must be displayed as “UPOD Feedback,” and the feedback must contain each of the fields’ content in the body of the email.

4.4.2.6: There must be text in each text box in order for the Send button to be functional, so as to prevent accidental (empty) feedback messages.

4.4.2.7: The UPOD logo and menu must remain visible at the top left of the page

4.4.2.8: The Search Bar must remain visible at the top of the page. (right aligned)

## Admin Login Page

4.5.1 Description

Site admins will need to enter credentials on this page – URL will only be given to admins (i.e. no direct link to Admin portal.) Admins will use their Novell credentials to sign in.

4.5.2 Functional Requirements

4.5.2.1: The Admin Login screen must contain a centered box containing the three elements of the page.

4.5.2.2: There must be a single line text box labeled “Username”.

4.5.2.3: There must be a second single line text box underneath the first text box labeled “Password”.

4.5.2.4: At the bottom of the container must be a button labeled “Login”.

4.5.2.5: Each of the listed elements must be center aligned on the horizontal axis of the container.

4.5.2.6: Clicking on the Login button must verify the admin’s credentials, and grant access to edit pages on successful verification.

4.5.2.7: The UPOD logo and menu must remain visible at the top left of the page

4.5.2.8: The Search Bar must remain visible at the top of the page. (right aligned)

## Search Results Page

4.6.1 Description

Users should be given enough relevant information after searching for a topic. Since some information can apply to many different disciplines, (i.e. Speed of Light would be found in both Classical Mechanics as well as Optics) a search for a term should a list of all Single Entry Pages that refer to that term. Results should be displayed with a Page Heading as well as a brief preview of the info contained on the linked page. (Similar to a general Google Search)

4.6.2 Functional Requirements

4.6.2.1: TBD