# Project requirements document

## Project Overview:

At present, UWA's School of Engineering employs static PDFs as study plans. These study plans, show the fastest route to graduation for full-time students who adhere to them. However, these study plans fall short in addressing the reality of students taking units out of sequence due to various circumstances such as failed units and part-time studies.

Prerequisites for certain units, along with exclusive semester offerings, further complicate matters. For instance, a Level 3 unit offered only in semester 2 requires a Level 2 unit from semester 1. Missing this Level 2-unit would delay progress by a year.

To address this, the client has proposed a dynamic web application that visually maps the quickest pathway, accommodating different circumstances and allowing students to adapt study plans effectively. This solution aims to optimize academic journeys, allowing students to tailor their study plans to their individual needs.

## Project Objectives:

1. Develop an interactive web-based study plan application.
2. Provide personalized study plans based on individual student input.
3. Offer an intuitive interface for students to interact with study plans.
4. Allow staff to manage course information, requirements, and updates.
5. Visualize prerequisites, pathways, and completion orders for course.

## Project Requirements:

Course Information Management: The application should allow staff to update unit information, including details such as prerequisites, and in which semester the unit is offered. Staff should also be able to update major information as needed.

Device compatibility: The application should be accessible on various devices, including desktops, tablets, and mobile phones.

Intuitive User Interface: The application should have an intuitive user interface that allows students to easily interact with their study plans. Students should be able to view their study plans in a visual format, add or remove units, and see the impact of their changes on their graduation timeline.

Pathway and Completion Order Visualization: The application should be able to visualize different pathways to graduation and the recommended completion order for units. This will help students understand the impact of their choices on their graduation timeline.

Personalized Study Plan Generation: The application should be able to generate personalized study plans for individual students based on their input (e.g., completed units, failed units, part-time/full-time status, don’t meet ATAR requirements). The study plans should show the fastest route to graduation while considering prerequisites and exclusive semester offerings.

Prerequisite Visualization: The application should be able to visualize prerequisites for units in a clear and easy-to-understand manner. Students should be able to see which units are required before they can enrol in a particular unit.

User Login: (OPTIONAL) The application should have a user authentication system that allows students to save and edit their study plans. This can be expanded to create staff accounts, to allow them to manage course information without engaging the backend.

Double major support: The application should support students pursuing double majors. This can be expanded to include majors outside of those offered by the school of engineering.

Multiple years: Units in each major and the prerequisites can change from year to year. Flexibility to choose year of commencement, which defines a particular unit set in the major, is desirable.

## 100 Dollar client value test:

Assuming the application has a budget of 100 dollars, the client prioritizes the project requirements as follows:

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| **Requirement** | **Value** |
| Course Information Management | 25 |
| Device compatibility | 5 |
| Intuitive User Interface | 10 |
| Pathway and Completion Order Visualization | 15 |
| Personalized Study Plan Generation | 5 |
| Prerequisite Visualization | 35 |
| User Login | 0 |
| Double major support | 0 |
| Honours supportMultiple years | 5 |

Additional notes:  
The minimum requirement for the application to be considered a success would be the successful visualisation of the mechanical and software engineering majors. The client would like for the project to be expanded to all engineering majors and across multiple years, time permitting..