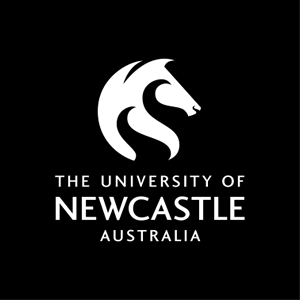
**The University of Newcastle**

**School of Electrical Engineering and Computing**



**Work Integrated Learning**

**COMP3851A – Semester 1, 2021**

**Project Plan**

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March 12th, 2021

1. **University of Newcastle Program Advisory Tool**
2. **Background**

The University of Newcastle (UoN) offers a wide array of different degrees and courses for students to undertake to progress their education. Depending on the amount of knowledge and experience required, each degree is different in the number of relevant units that students need to complete and their respective core courses, which are required to receive their certification. In certain circumstances, some courses that are required to be undertaken have pre-requisite courses that must be completed to enrol in. In addition to this, students can have other commitments, restrictions on how many units they can manage within a semester, have their own preference on what order they wish to enrol in each course and, in some cases, the semesters that the courses are offered in. These situations all impact the progress through the student’s degree and can require an alternate plan to the recommended plan provided by UON. With no organisational tool to assist students in planning out their degrees with the aforementioned limitations and the amount of time required to check each course for their pre-requisite courses, the degree planning aspect of university life can be a complex daunting and time-consuming experience for students to plan out while ensuring all of the previously mentioned restrictions are considered. The group of IT and Computer Science Students will develop a course management tool and implement it within 12 months using a set of advanced web technologies including Python and Database management languages such as MySQL. The team will also make sure to incorporate the best front end and backend programming methodologies and deliver a suitable program advisory tool within the specified timeframe.

1. **Aims**
2. **Improve Student Experience**
   1. By developing the program advisory tool, we aim to improve the experience of students by eliminating the stress of ensuring their enrolment is correct. Students will be able to complete their enrolment with less overall mistakes using our application.
3. **Assist Program Advisory Staff**
   1. By developing the program advisory tool, program advisor staff should receive fewer requests for assistance, freeing up staff and improving response time for students with more pressing concerns.
4. **Develop Program Advisory Tool**
   1. Develop a program advisory tool to assist students in finding the right path through their degrees.
   2. The Program must be easy to use for students.
   3. The Program must be flexible, in the event of changes to assumed knowledge, course codes etc.
   4. The Program must be extendable. Clients must be allowed to add additional degrees or majors.
   5. The Program must support both part time and full-time study.
   6. The Program must allow for study break (i.e., Delay the degree by one semester)
   7. The Program must allow clients to manually select subjects and move them if they wish.
   8. The Program must run via standard web browsers such as Microsoft Edge, Google Chrome, Firefox and Safari.
5. **Methods and activities**

* **Improve Student Experience**
* To improve the student experience the group will undertake a survey of University of Newcastle students and their experience regarding their course enrolment to improve the implementation of the program advisory tool.
* **Assist Program Advisory Staff**
* An error free design and approach will be researched and implemented into the application to reduce the number of requests that staff are receiving regarding students.
* An approach to implementing this error free design is ‘The 2 Gulfs’ which is the Gulf of Execution and Gulf of Evaluation [1] which define the usage of the tool and if the tool works to how the user expects it to.
* **Develop Program Advisory Tool**
* The group will have to develop the application using standard programming languages such as Python, HTML, JavaScript and CSS. These languages must be learnt in order to make a successful application that runs in the web browser.
* In order to create a flexible application, the correct implementation of a Programmable database in order to allow the application to be able to change the program's information if it is changed. This is done through the implementation of MySQL [2] and its documentation. This will also allow the program to be extendable, allowing additional majors or degrees.
* The user interface and user experience must be suitable for students and be familiar to other applications that the user has used before. This will include learning proper UI/UX.

1. **Expected Outcomes**

* Develop Program Advisory Tool rough prototype idea to define the application before the implementation of the program.
* Develop and complete the University of Newcastle Program Advisory Tool which can ensure course enrolment and course information is correct for students.
* Have extendable settings that can change the structure of the pathway, catering to full-time, part-time and study breaks.
* Incorporate a simple and easy to use UI that is easily able to be change or edit courses in the pathway. This will include the goal of having less reports made by students regarding using the tool.
* Include suggestions made by program advisor staff to be able to more easily include information about the course so that the program tool is accurate.
* Have the program able to suggest subjects for electives related to the core degree, as well as identify between core, major and elective courses.
* Test the application in the standards browsers including Microsoft Edge, Google Chrome, Firefox and Safari.
* Roll out the program advisory tool to students and ensure that there is no complaints regarding the application.

**6. Ethics, intellectual property and confidentiality considerations**

The purpose of our system is to improve students’ learning efficiency at any stage of their studies and help them complete their degree courses. Therefore, our system can obtain various privacy rights, such as the user's personal information.

Our application will follow the Privacy Act Law and comply with the Australian Privacy Principles application [3]. Regarding privacy, we will obtain the user's name, age, year of registration, profession, phone number, email address and home address and secure the information properly in the applications database. If this information is exposed, it may cause great distress and harm to users. Therefore, each piece of data must be stored in a database that has been encrypted and passwords and sensitive information hashed to ensure security, and the database must be regularly checked and updated.

The program advisory tool that is developed will abide by the technologies such as Python and MySQL fair use policies in order to ensure that the application is developed in a responsible way and that the application can launch without any issues.

Regarding intellectual property that the application uses in the development of the program advisory tool, permission from the University of Newcastle will be obtained in the use of its Logos and permissions to incorporate the application into the existing University of Newcastle infrastructure and systems. This will furthermore also be subject to the Privacy Act and fair use policies of the University of Newcastle.

Expanding on the confidentiality of the users, the application will secure the students work and choices will be protected from misappropriation and not be exploited.

The program advisory tool developed for the University of Newcastle will incorporate best practices to not harm or cause any mental distress or psychological harm to people and those with mental health issues. The application will be tested and improved upon to ensure that it is safe to use.

**References**

[1] Laubheimer, P., 2015. *Preventing User Errors: Avoiding Conscious Mistakes*. [online] Nielsen Norman Group. Available at: <https://www.nngroup.com/articles/user-mistakes/> [Accessed 25 March 2021].

[2] Dev.mysql.com. 2021. *MySQL :: Getting Started with MySQL*. [online] Available at: <https://dev.mysql.com/doc/mysql-getting-started/en/> [Accessed 25 March 2021].

[3] Business.gov.au. 2021. *How to protect your customer's information | business.gov.au*. [online] Available at: <https://www.business.gov.au/online/cyber-security/how-to-protect-your-customers-information> [Accessed 30 March 2021].