MASTER SCHEDULIZER

Software Requirements Specifications

V 1.0

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Revision History

Name	Date	Reason For Change	Version
Anh Huynh Alex Marion Mahmuda Liza Purav Barot Ryan Efendy	1/18/16	Initial Version	1.0

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1. Introduction:

1.1 Purpose

The purpose of this document is to specify the complete functional, nonfunctional and technical requirements for Master Schedulizer. This document lays out the various application features and details for end-users, developers, and anyone reviewing the project.

1.2 Scope

Due to limitation such as time constraint of this course, Master Schedulizer is only intended for Drexel freshman majoring in Computer Science as a standard base case.

In the future, given the appropriate information and access, Master Schedulizer will be able to handle and operate on other Drexel students of different majors, class standings (Sophomore, Junior, Senior…) and academic standing.

1.3 Intended Audience

Master Schedulizer is intended for any Drexel students who wish to create an accurate yet flexible Plan of Study that is tailored to their academic and personal needs, while still complies with the university's rules and regulations.

1.4 Requirements Apportioning

Priority Level	Description
1	This is the highest level priority. Requirements of priority level 1 are essential and core to the program's functionality. These requirements must be fulfilled in order for the software to be in usable form.
2	Requirements of level 2 must be completed, however the program's core dependencies does not rely on them. These requirements are expected to be satisfied but not fully verified.
3	Level 3 requirements are for future releases and versions of the software. These requirements are not expected to be satisfied in this release but will be added at a later date.

1.5 Goals

Master Schedulizer serves to streamline the process of creating a plan of study, as well as to allow users to keep track of requirements and electives. Given a user's major(s) and minor(s), Master Schedulizer creates a generic template which outlines a full college plan. The user can then add tracks, minors, electives, and other classes of interest. Master Schedulizer will also track requirements and make sure that the plan of study doesn't violate university policy and is possible in the given timeframe (all courses must be available in the chosen term, etc.). Master Schedulizer offers other course information such as suggested teachers, course difficulty, and workload based on past reviews.

If integrated into Drexel's systems Master Schedulizer would allow advisors to track advisees with greater ease. Heads of departments could also track the number of students who are taking a specific course in any given quarter giving a better estimate of the needed sections.

2. Functional Requirements:

2.1 Access user's information from DegreeWorks

2.1.1) The user's information will be pulled from DegreeWorks and translated into a format readable by Master Schedulizer. (Priority Level 1)

2.2 Generate standard Plan of Study (POS)

2.2.1) The information pulled from DegreeWorks will be used to generate a POS based on courses and requirements that have already been completed. (Priority Level 1)

2.3 Allow tracks selection

2.3.1) The user must select two of the tracks from the Drexel Computer Science program which will be added to their POS. (Priority Level 1)

2.3.2) The user will have the ability to change their tracks and thus updating the POS accordingly. (Priority Level 2)

2.4 Allow electives selection

2.4.1) The user may select electives in eligible quarters to fulfill elective requirements. (Priority Level 1)

2.4.2) The user will have the ability to change their electives and thus updating the POS accordingly. (Priority Level 2)

2.5 Allow schedule reconfiguration

2.5.1) The user may move a course to another eligible quarter to see how this may affect the rest of their POS. Reconfiguring a schedule may lead to an earlier or later graduation date. (Priority Level 1)

2.6 Specify courses' constraints/availability

2.6.1) The system will alert or give the user an error message when he/she tries to add a course that does not meet the registration restrictions i.e. Closed Section, Permission Required, College, Major, Class, Level Restrictions, Prerequisite/Co-requisite, Max Hours exceeded.
See the following link for more details on registration constraints: http://drexel.edu/drexelcentral/courses/adjustments/registration-restrictions (Priority Level 2)

2.7 Allow saving and storing POS

2.7.1) The POS may be saved for the viewing of the user. The POS may also be saved in a format which Master Schedulizer can read in order to load data from a previous session. (Priority Level 1)

2.7.2) The user will have the ability to save different copies of POS. (Priority Level 3)

2.8 Allowing sorting of POS

2.8.1) The user will have the functionality to sort their POS based off courses with the highest priority, meaning if they don't take these specific courses it will have a ripple effect thus delaying his/her anticipated graduation date. (Priority Level 3)

3. Non-functional Requirements:

3.1 Usability

3.1.1) Master Schedulizer will be designed such that users can accurately self-report their own behavior. Overall interface will be easy to use and remember how to use it. (Priority Level 1)

3.2 Maintainability

3.2.1) Master Schedulizer must be designed for maintainability. It will be modular in design so that changing aspects of one module do not affect the others. (Priority Level 1)

3.2.2) Able to survive a massive influx in traffic especially during registration period. Priority Level 2)

3.3 Scalability

3.3.1) The design of Master Schedulizer will be such that updates, modifications, and expansions can be added easily. The first version of Master Schedulizer only encapsulates a portion of the full vision and therefore it must be scalable. (Priority Level 2)

3.3.2) Allow future developers to add functionalities easily without having to understand every single aspect of the code. (Priority Level 2)

4. Performance Requirements:

4.1 Should be "high throughput performance" (ability to process a large volume of transitions within a timeframe) that can degrade response time. (Priority Level 2)

4.2 Able to handle high volume of traffic during important time such as registration period. (Priority Level 2)

5. System Evolution

5.1 The current plan for implementation only allows the user to interact with the command line or a simple graphical user interface to select their electives, minor(s) or tracks. In the future, we would like to create a front end user interface that will have Easy-To-Use simple drag & drop capabilities to build their POS. (Priority Level 3)

5.2 The development team will continue to reach out to students, professors, advisors and the greater Drexel community to improve upon Master Schedulizer. Our vision is for this application to become the official replacement DegreeWorks. (Priority Level 3)

6. Appendix

6.1 Glossary

POS - Plan of Study
TMS - Term Master Schedule
CS - Computer Science
Tracks - Drexel CS students must complete two of the 11 possible tracks in order to graduate. Tracks listed below:

a. Algorithms and Data Structures
b. Artificial Intelligence
c. Computer and Network Security
d. Computer Architecture
e. Computer Graphics and Vision
f. Computing Systems
g. Game Development and Design
h. Human-Computer Interaction
i. Numeric and Symbolic Computation
j. Programming Languages
k. Software Engineering

Eligible Quarters - A quarter is eligible for a course if adding the course doesn't break any of the university policies (ie: must be 20 credits or under, must have fulfilled prerequisites for course, etc.)