CS Advisory Planner

A CS Advisory Planner is proposed to complement, facilitate, and enhance the academic advising process involving students and faculty within the Computer Science program at Metropolitan State University of Denver.

This document provides information intended to support the development of such a product.

Version Fall 2014 – 1.0

PURPOSE

The purpose of this project is to make a software system that will assist students in keeping track of their required curriculum throughout their attendance at MSU Denver within the Computer Science program. The system will keep track of what prerequisites are needed and what prerequisites are met by each student throughout their attendance in the program. The product will allow advisors to look up student data and quickly assist in the shaping of their schedules. It will enable students to request future classes so that the faculty and staff of the Computer Science department can determine the current demand from students for each class. The software system will also include features to assist faculty in making schedules for future semesters for the Computer Science program.

SCOPE

The system's user interface will be a website and will be supported by a local web server. The web server will handle requests from the front end, manipulate information stored in the database and send back appropriate information. The system will provide the students or interested parties with information about classes they need in order to complete the Computer Science program as well as prerequisites for those classes. Enrolled students will be able to enter information about their classes as well as enter notes relating to their schedule. They will also be able to retrieve any saved information as well as notes entered by advisors. Advisors have the ability to retrieve student profiles from the system and enter notes relating to the students schedule or future plans. Advisors will also have the ability to generate statistical reports based on data entered by students. System administrators will have all the same abilities that the advisors do. In addition, administrators will have the ability to add or edit information about classes. They will also be able to edit account information and change the account type.

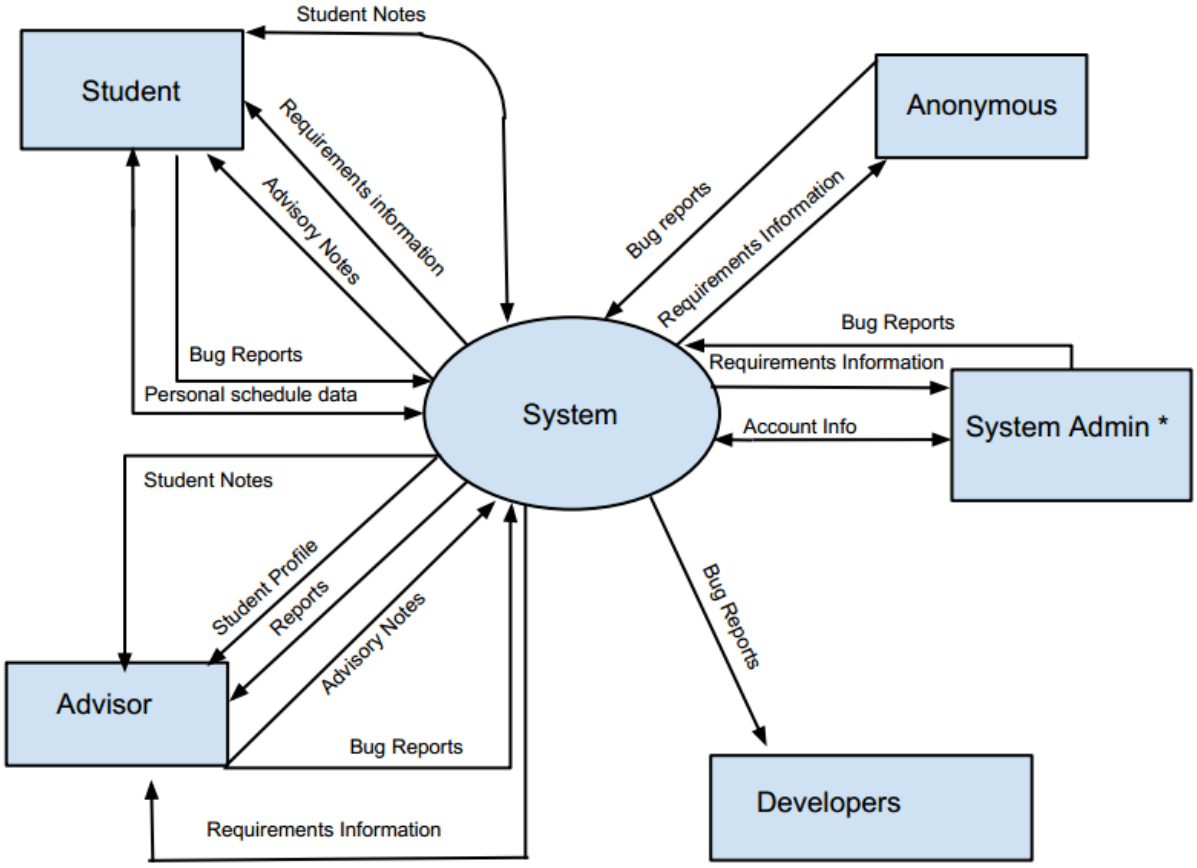
DEMOGRAPHICS

This product will be used within Metropolitan State University of Denver by students enrolled or interested in the Computer Science program and by faculty of the Math and Computer Science Department.

ACCESSIBILITY

The product will require the user to be connected to Metro State's network and will require a recent version of a popular internet browser (Firefox 2.0+, Chrome 8+, Safari 3+, Opera 10.6+, or Internet Explorer 6+). By default the product will be very visually dependent and require heavy use of the mouse. However, the product will allow the user to edit how content is displayed and will conform to the Universal Design for learning principles to ensure that it works with screen readers and other software designed to aid people with accessibility issues. Additionally, the product will accommodate people with disabilities to differentiate between colors by including optional symbols for representation where colors are used. For users that struggle with mouse use or are visually impaired, there will be additional versions of the product that allows users to navigate with just the keyboard or eliminate the use of styling to be compatible with additional accessibility software. The user interface will also be designed to be functional for users that do not wish to use JavaScript.

CONTEXT DIAGRAM



*System Admin also inherits all information flows associated with Advisor

DEFINITIONS

Account Information
This includes the amount of access an account has and any other information associated with it.

Advisory Notes
Notes entered by advisors regarding students' scheduling information.

Bug Reports
A reported issue from the user about the system.

Developers
Takes bug reports and diagnoses the issue. They are then responsible for fixing the bug.

Personal Schedule Data
Any information students enter about classes. This includes when they plan to take classes in the future and any data they have entered about classes taken in the past.

Reports
Statistical analysis of data entered in by Computer Science students.

Requirements Information
Classes a Computer Science student needs to complete in order to finish their degree. This will also include what prerequisites are required for each class.

Student Notes
Notes entered by students regarding scheduling information.

Student Profile
This includes advisory information, personal schedule data and any information entered by the student.

USER STORIES

The following sample user stories were generated based on initial discussions with a key stakeholder. These, and many others, were used as a simple way of communicating ideas and potential requirements with the stakeholder. The color used in the top left corner of each card indicates to which user role it corresponds.

As a student I want to

know what classes I can take next semester

so that I can request certain classes

As any user I want

the system to be secure

so that no one else can access my information

As a student I want to

enter which teacher I took for a previous class

so that teachers and I can keep track of what teachers I had

As a teacher I want to

enter notes about advisory meetings

so that I can keep track of plans students made in previous meetings

As a teacher I want to

open a student's profile

so that I can help advise them

As a student I want to

know what classes are required

so that I can meet the required classes for the major

As a developer I want to receive bug reports

so that I can fix the system

As any user I want to be able to report a bug

so that the system can get fixed

USER'S GUIDE

The following sample user guide is intended to serve as a means for eliciting, specifying, and validating requirements. The premise is that such anticipatory documentation, driven by and in conjunction with user stories, may prove to be more effective than other forms of software requirements specifications. (See: "User's Manual as a Requirements Specification: Case Studies" by D. M. Berry, et al., 2003, http://web.vtc.edu/users/cad03090/sad-r/users.man.pdf, and *The Deadline* by T. DeMarco, Dorset House, 1997)

CS Advisory Planner

User's Guide

Introduction

The CS Advisory Planner (CSAP) is a web-based system designed to facilitate student mentoring and advising at MSU Denver. It is designed to complement the traditional advising process in Computer Science. The CSAP provides services that will assist students in keeping track of their required curriculum throughout their attendance at MSU Denver within the Computer Science program. The system will keep track of what prerequisites are needed and what prerequisites are met by each student throughout their attendance in the program. The website will allow advisors to look up student data and quickly assist in the shaping of their schedules. It will enable students to request future classes so that the faculty and staff of the Computer Science department can determine the current demand from students for each class. Students are recommended to use this program as a general guide, but always check with their Computer Science Academic Advisor at least two weeks prior to the registration date to verify that they are taking the best classes.

Getting Started

This User Guide provides you with needed information and tips for using the CS Advisory Planner (CSAP). The UAS application allows the students to:

- Figure out all classes involved in a CS degree and a suggested schedule
- Plan a CS degree to know when you'll graduate
  - Edit the CS degree plan and review the impacts of a student's planned graduation date
  - Review the CS degree progress and see which classes a student has remaining to complete a degree
- Check the prerequisites for all CS courses
- Report an issue with the system

The students will able to use to system to review their online advising sessions with their MSU Denver CS advisor.

System Requirements

The CS Advisory Planner is a web-based system. System use requires access to the internet and any standards compliant internet web browser. We recommend the following browsers:

Mozilla Firefox version 3.5 or higher
Internet Explorer version 8 or higher
Google Chrome version 4 or higher
Opera browser version 12.14 or higher
Apple Safari 5.17 or higher

For the best browsing experience, JavaScript should be enabled in your internet browser.

Accessing the CS Advisory Planner System

Enter your **ConnectU Username** and **Password** and click **Login** to access the system.

User accounts and permissions are established by create an account with user's MSU Denver information. User with an account will be able to save and load their advising sessions.

Users can also access the system by clicking on **Enter as Guest**. Users without an account will be able to browse the system but they will not be able to save the advising sessions.

At the login webpage, users can create a new account by clicking on **Create Account** link and reset the password by clicking on **Reset Password** link.

Create an Account

Enter **First Name**, **Last Name**, **ConnectU Username**, and **900 Number** then click **Create**.

The system will email users a create account confirmation email with a confirmation link. When clicking on the **confirm account** link in the email, the user will be redirected to **Set Password** webpage. At the **Set Password** webpage, users will be able to set password to connect to the advising system main website.

Authenticate Account and Password

When authenticating new accounts and resetting passwords, users will be required to use their MSU Denver email account. Users will need to click on the **confirm account** link in their email and the user's internet browser will be redirected to **Set Password** webpage. At the **Set Password** webpage, users enter the new password to reset or change their password.

Open the email then **click on the confirm link** embedded inside the email message.

Set Password for New Account

Enter **Password** and **Confirm Password** then click **Set Password**.

The user's internet browser will be redirected to the advising system main webpage.

Forgot Password

Enter **ConnectU Username** and click on **Email**.

The system will email users with reset/change password message with a confirmation link.

Set Password for Reset Password

Enter **Password** and **Confirm Password** then click **Set Password**.

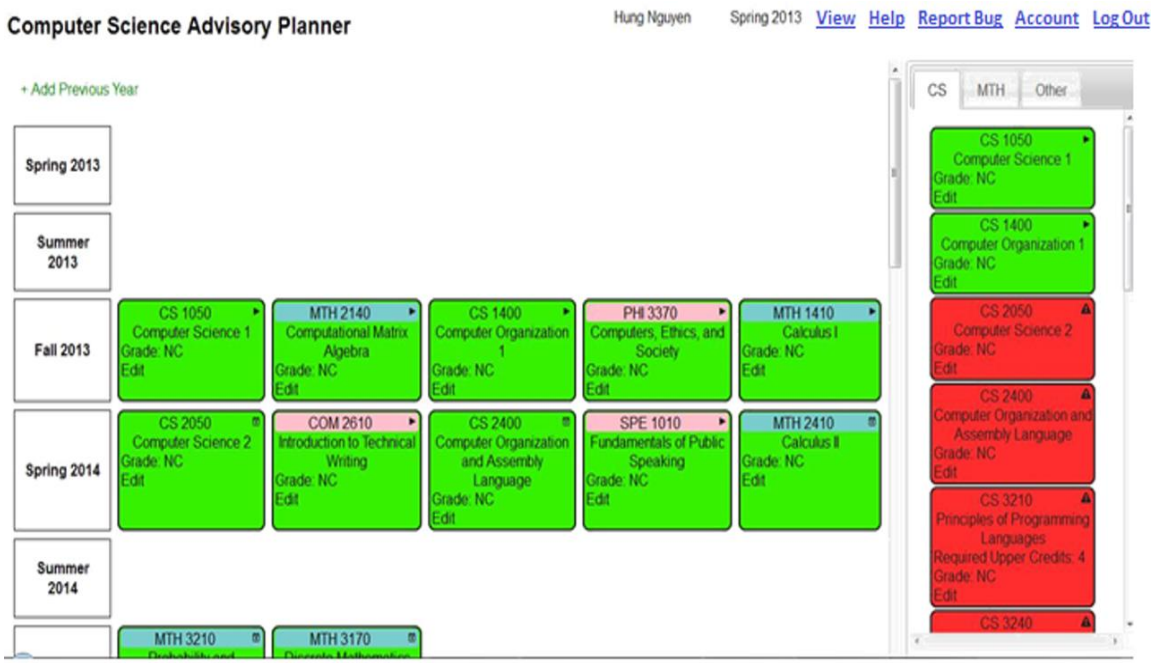
The CS Advisory Planner System Website Navigation – JavaScript Enabled

At the main web page, users can perform the courses scheduling for each semester and the complete CS degree plan. The CS degree is highly structured which requires student to follow a series of courses each semester to appropriately progress through the degree program. While there may be some slight deviations from the plan based on your situation, for such programs we strongly advise that you adhere as closely as possible to the plan in order to finish your degree in a timely manner. In this JavaScript enable version, users can plan the degree by drag and drop the classes for each semester and the results of years for completing the degree.

The Main Page

The main webpage has two main panels. The left panel is loaded with courses tiles along with semester and the year for students to plan the degree and the right panel is a library of all courses tiles. All the courses tiles are both **moveable** and **editable**. Initially, the brand new user will have the left panel automatically load a default suggested schedule for each semester along with the courses tiles. For returning users, it will automatically load the saved schedule of their last session.

The library contains default courses tiles for computer science, mathematics, and auxiliary courses.


Computer Science Advisory Planner
Hung Nguyen
Spring 2013
View
Help
Report Bug
Account
Log Out
+ Add Previous Year
Spring 2013
Summer 2013
Fall 2013
CS 1050 Computer Science 1 Grade: NC Edit
MTH 2140 Computational Matrix Algebra Grade: NC Edit
CS 1400 Computer Organization 1 Grade: NC Edit
PHI 3370 Computers, Ethics, and Society Grade: NC Edit
MTH 1410 Calculus I Grade: NC Edit
Spring 2014
CS 2050 Computer Science 2 Grade: NC Edit
COM 2610 Introduction to Technical Writing Grade: NC Edit
CS 2400 Computer Organization and Assembly Language Grade: NC Edit
SPE 1010 Fundamentals of Public Speaking Grade: NC Edit
MTH 2410 Calculus II Grade: NC Edit
Summer 2014
MTH 3210
MTH 3170
CS
MTH
Other
CS 1050 Computer Science 1 Grade: NC Edit
CS 1400 Computer Organization 1 Grade: NC Edit
CS 2050 Computer Science 2 Grade: NC Edit
CS 2400 Computer Organization and Assembly Language Grade: NC Edit
CS 3210 Principles of Programming Languages Required Upper Credits: 4 Grade: NC Edit
CS 3240

Planning the degree

Users are able to plan the degree by editing or modifying the suggested default schedule based on their personal academic history. Users are then able to assemble each semester schedules that best fit their personal agenda.

Click on any course tile, **move**, and **place** it in a desire time slot.

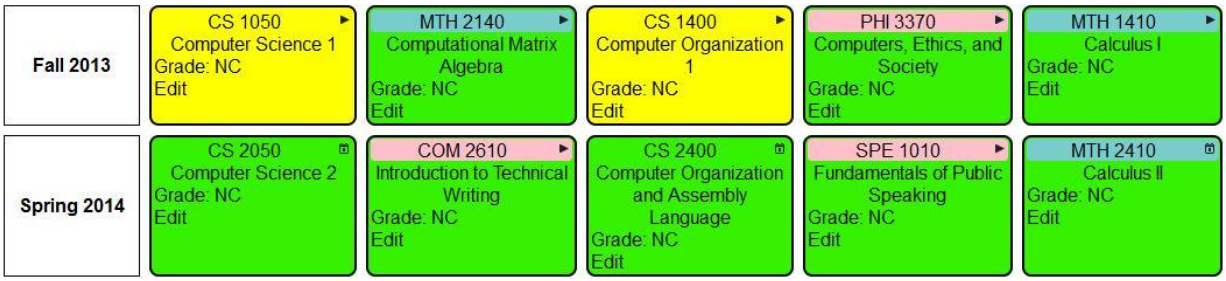
The user's schedule will be automatic updated and saved.

Sample screen shot: The course CS 1050 is being placed at the beginning of Fall 2013.

Check for Prerequisite

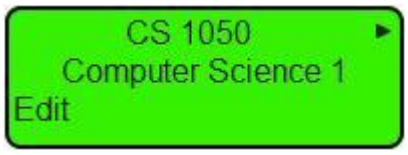
Hover the mouse over a course and all of its **prerequisite courses will be display** highlighted in **Yellow color**.

Sample screen shot: Hover the mouse over CS 2400 course tile and two courses tiles CS 1050 and CS 1400 are highlighted in yellow color.

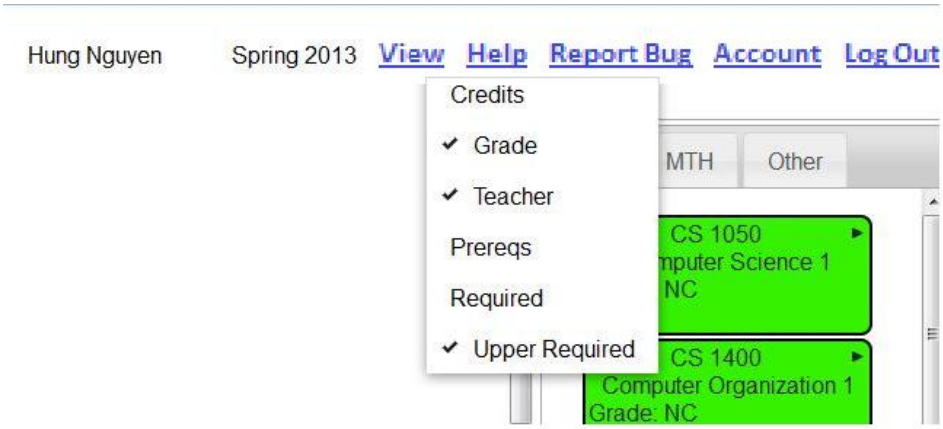


Course Tile

All the courses are presented as tiles and are both moveable and editable.
Each of the course tiles is preset with two main label rows and an edit button row. The top row is a course number, second row is course name, and third row is the edit button. A typical course tile looks like this:



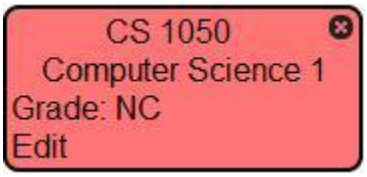
Users able to display more information in the course tile by choosing the option under **View** link at the top left of the main web page. Here is a list of additional contents:



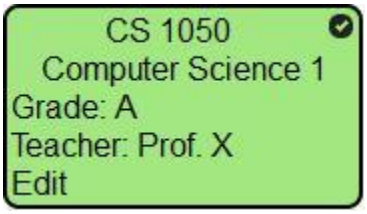
Course Tile Color Legend

Users are able to verify the validity of their schedules by the color of their course tiles.

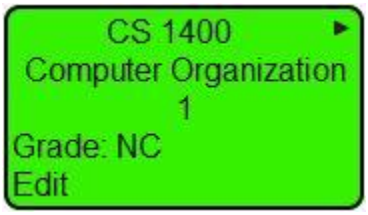
The course tiles are color coded to assist the users to identify type of course and plan their degree accordingly. There are five colors utilized to categorize each course: gray, yellow, orange, red, green, and opaque. Here is the list of the colors and their implication:



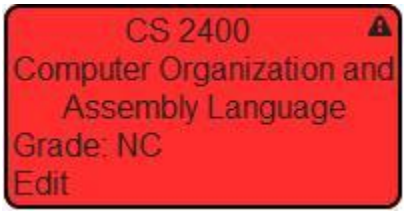
Light Red: course completed without grade/credit.



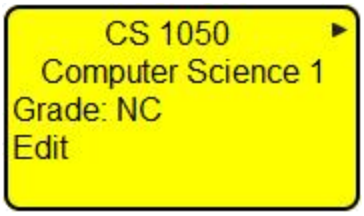
Light Green: course completed with grade/credit.



Green: a course that user currently eligible to register and a course user will be eligible to register if follow the current schedule.



Red: a course user is not eligible to register yet.



Yellow: a course that is a prerequisite for a certain class.

Alternative Color Legends:

Hover the mouse over the **Help** link, the default color legend will appear on the screen.

Edit Course Tile

The edit link enables users to edit the information of each individual course tile. The tile's editable contents varies depend on the type of the course such as taken course, current course, and future course. Users are also able to alter their degree plan or course schedule using the edit course menu.

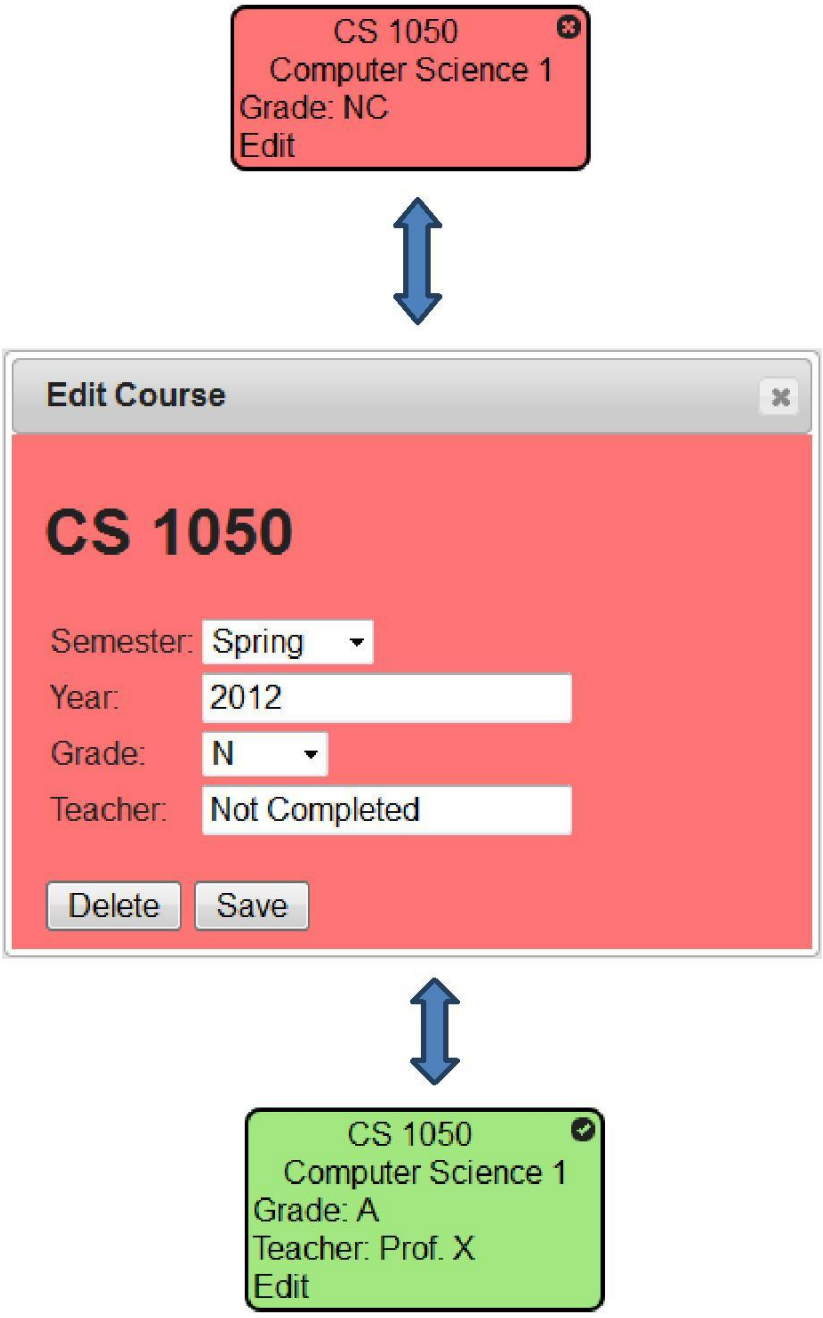
Convert taken course tiles from **No Grade/Credits** to **Received Grade/Credits**

Selected course tile must be in **Light Red**

Click on **Edit**

Enter all the necessary fields

Click Save



Modifying Degree Plan or Course Schedule

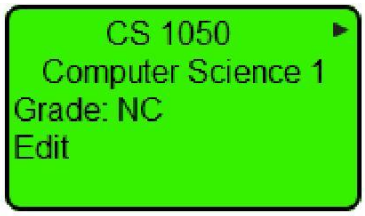
Place a course tile to a specific schedule – **Left**

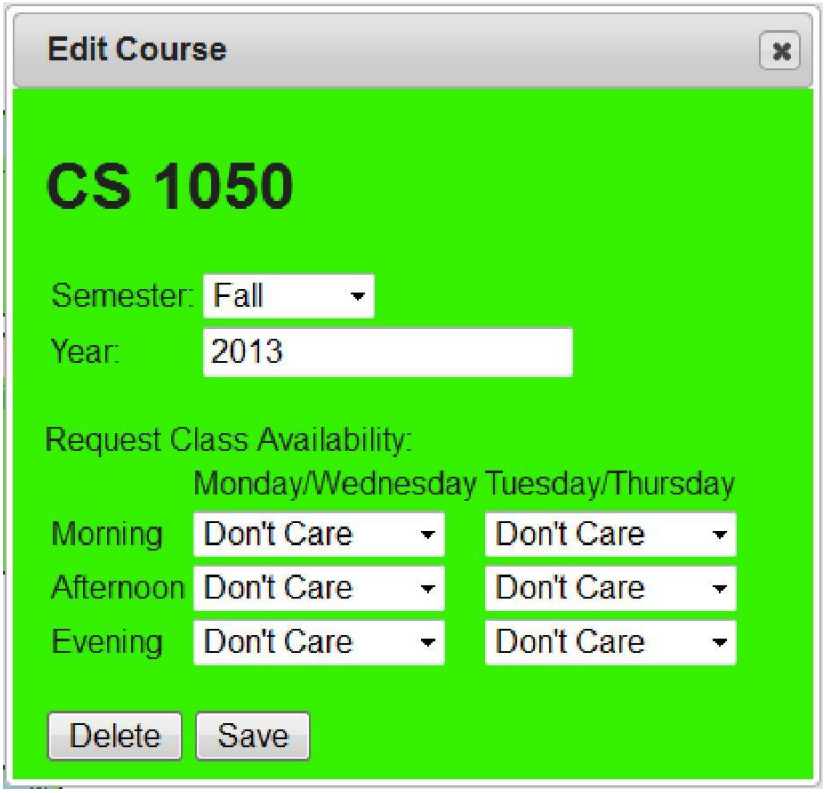
Panel ○ Click **Edit** of a course tile

- Select and Enter desired **Semester, Year,** and **Availability**
- Click **Save**

Delete a course tile from a specific schedule

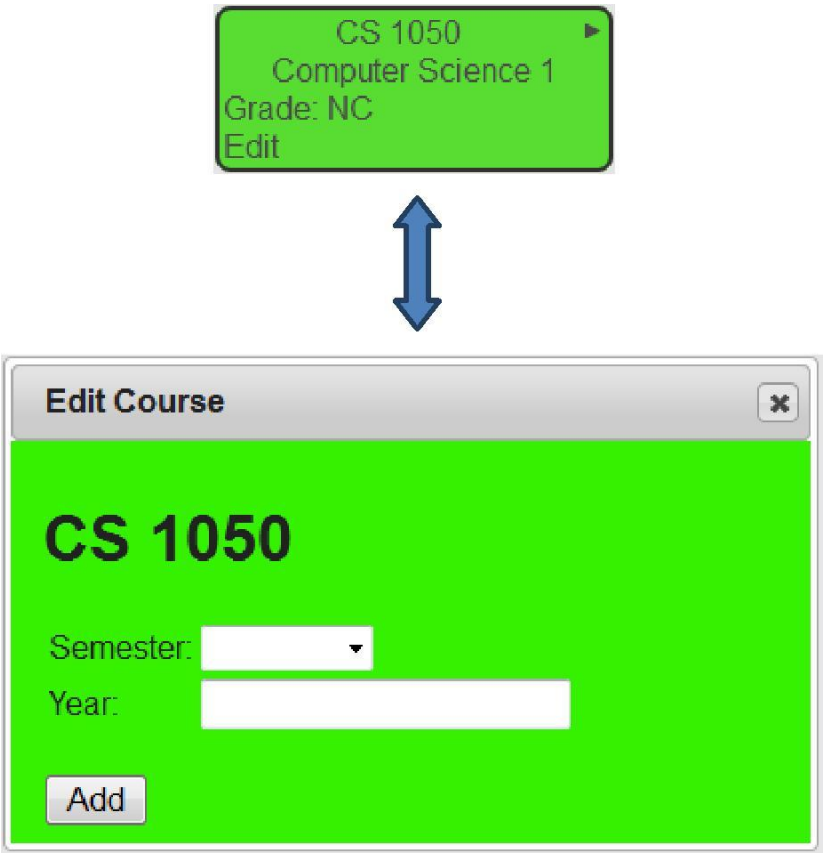
- Click **Edit**
- Select desired **Semester** and **Year**.
- Click **Delete**





Place course tile to a specific schedule – **Right Panel (Tiles Library)**

- Click **Edit** of a course tile
- Select and enter desired **Semester** and **Year.**
- Click **Add**



Edit Account

Users are able edit their account information or change their password by **Click** on **Account** link at the top of the main web page.

Edit Account Information

Edit any desire field then **Click Save.**

Change Password

Click on **Change Password** at the **Edit Account Information** screen

Enter old password and new password then **Click Reset.**

The CS Advisory Planner System Website Navigation – JavaScript Disabled

In this JavaScript disable version, the users will have an inferior browsing experience in which it will be less intuitive and interactive. As JavaScript enabled version, the process of accessing the system is the identical version but browsing the main web page will be slightly different.

The Main Page

The set-up of the main webpage in this version is the same as JavaScript version. This version has the same panel set-up as well as the schedule loading. The left panel is loaded with courses tiles along with semester and the year for students to plan the degree and the right panel is a library of all courses tiles. However, the courses tiles are only **editable** and all tiles information is displayed.

Planning the degree

Users are able to design or alter their degree plan by editing the each of the course tile in the default schedule to match their personal academic history and preferred agenda.

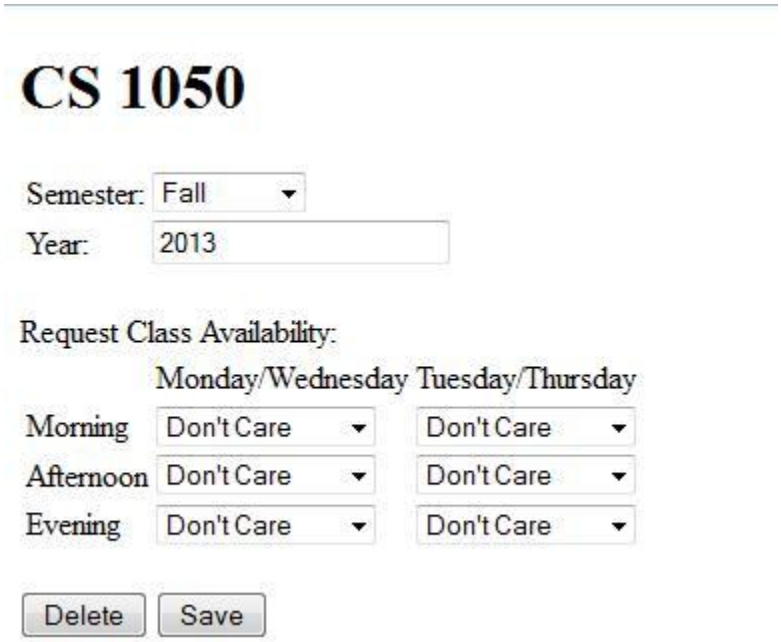
Build/Edit Degree Plan or Course Schedule

Place a course tile to a specific schedule

- Click **Edit** of a course tile
- Select and Enter desired **Semester, Year,** and **Availability** from new page
- Click **Save**

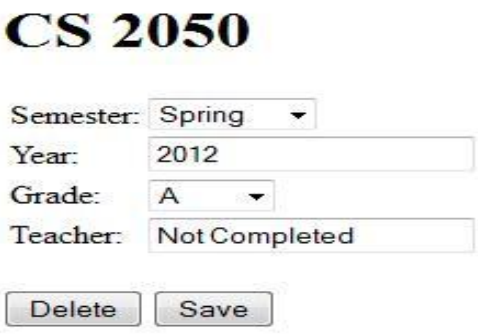
Delete a course tile from a specific schedule

- Click **Edit**
- Select desired **Semester** and **Year**.
- Click **Delete**



Edit a course tile content for previous course without credit

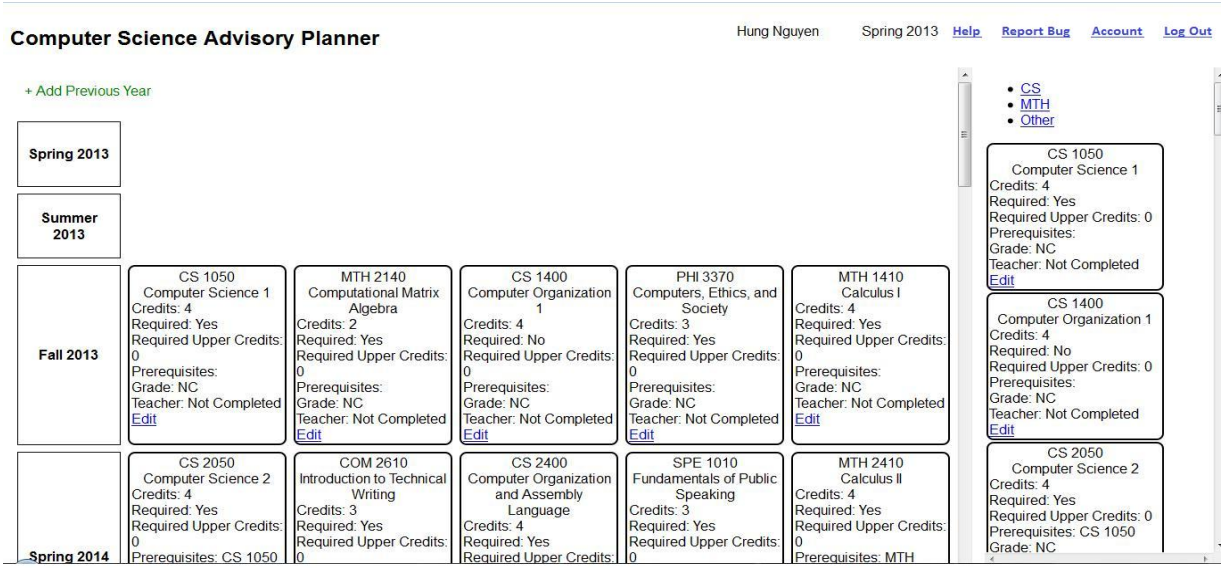
- Click **Edit**
- Select desired **Grade**
- Input **Teacher Name**.
- Click **Save**



Sending Reports for Issues found in the System

Users are able to report issues they find within the system using built in features that takes information from the user and sends the data to the system developers.

For the user to report a bug, they will need to go to the top right hand corner of the main page. The "Report Bug" option can be found between "Help" and "Account".



Bug Report

- Click **Report Bug**
- Type the issue in the given space.
- Click **Send**