**Team B (Long, Darwin, Emilio)**

**Audience and Process Analysis**

Users

* Faculty: Teaching Staff, Course Coordinator (Client), Division Head, the Dean, and Maintenance
  + Teaching Staff, rather than emailing an excel file with their preferred schedule, they will now input data into the new system for the course coordinator to compile. After the course coordinator creates a draft for the schedule, it is then up to the teaching staff to correct any errors or problems with the drafted schedule.
    - Input data
    - Data: Teaching Staff preferences and requirements
      * Preferred days
      * Preferred times
      * Preferred courses
      * Required Credits for tenure/fixed teaching
      * Extra work load
  + Registrar / Client (David Bender): With the new system the tasks of the course coordinator will not necessarily change, but it will be a lot more efficient than how it would have been done prior to the new system. With a quicker more efficient way of compiling information, the course coordinator will be able to create drafts more quickly. This in term means that less time will be wasted on compiling information and more time can be focused on meeting the preferences of the teaching staff.
    - Compiles teacher preferences and requirements
    - Follows specific guidelines for scheduling courses and sections (Number of credits, Teacher Workload, Fixed Term/Tenure Track, etc.)
    - Uses information from previous years to determine specific number of sections
    - Creates draft schedule as close to teaching staff preferences as possible while still meeting the requirements for fix/tenure
    - Makes revisions if there is conflict with drafted schedule
    - Makes all final decisions for scheduling
  + Division Head: The division head needs to have access to the system in order to determine which courses and sections will be open for the teaching staff.
  + Dean: Reviews the schedule while it is being creating
  + Maintenance Staff: Maintenance staff will be needed in order to keep the system up and running.
    - Configuring
    - Upgrading
    - Administration
    - Monitoring
    - Security
    - Maintenance
* Students: Won’t necessarily be inputting data into the system but will be taking the information already inputted by the teaching staff and compiled by the course coordinator and create a class schedule for the next semester.
* Business Process
  + Compiling Data: Teaching staff input preferential data. Course coordinator compiles the teaching preferential data along with scheduling data from previous years. After compiling both data sets, the course coordinator then applies any specific course priorities for each semester. Each priority goes as follows:
    - Priority: At least one section of the courses listed on the academic roadmap
    - Priority: All mandatory courses are offered according to academic roadmap
    - Secondary Priority: courses required to declare a major is offered both semesters
  + Drafting Schedule: After compiling all of the necessary data, the course coordinator creates a draft schedule.
    - Courses offered
    - Number of sections per course
    - Class times
    - Who is teaching each sections
  + Revising Schedule: Draft finished and sent to teaching staff and faculty to check for any conflicts. Revising may take several drafts before final product.
  + Finalizing Schedule: The revised draft is finalized with minimal errors/conflicts and is ready to be uploaded and available for student use.

**Data Analysis**

* Data gathered based from Client’s description of problem
  + Preferred schedules from teaching staff
    - Determines:
      * How many classes the teaching staff can teach?
      * Who teaches what class?
      * What day?
      * What time?
  + Information is gathered from how the current scheduling process works and scheduling data the client has gathered from previous years based on their past experience drafting a schedule. (Scheduling information: Which courses were open, numbers of sections in each, how many students applied for the section etc.)
    - Determines:
      * Number of sections to open per course
      * What courses to offer (New/old), that are not part of the academic roadmap
      * Is it worth it to open a new section?
      * Are there enough resources (Classrooms, equipment, teaching staff, etc.) to have multiple sections of a course to be open?
      * Depending on the course, certain classes can only be in certain classrooms and can have so many students per room
  + Must coincide with Recommended Academic Plan (Academic Roadmap) for every major
* Current system
  + The current system is put together pretty well, rather than creating a new system, modify the current system to meet the client’s needs.
    - Pros
      * Search option to find classes by what general education credits it may fulfill
    - Cons
      * Input of data is inefficient
      * Recommended Academic plan is not part of the search options
      * Not very user friendly for students because lack of inclusion for recommended academic plan
* New system
  + The system, rather than creating a new one, modify the current one to gather data more efficiently and provide an easier way to display the compiled data to students in the form of the course scheduler while still being user friendly.
    - Improvements
      * Include a form for teaching staff to input their preferential data
      * Include search option based on recommended academic plan
      * Include search option for major specific course

**Data Uses, Issues and Guidelines**

* Data Uses
  + Used to create course schedule for every semester
  + Course schedule draft will be made more quickly
  + Data will be input more efficiently
  + Time between drafts will decrease
  + More time for fine tuning a final draft of course schedule
* Issues
  + Transition to new system
  + Implementing system into Elion
  + Including automatic recommended academic roadmap towards new drafts will take time
  + Potential security issues
  + Hardware issues (Will there be a need to upgrade hardware? Will there be enough room on the server? Etc.)
  + If something changes in the courses offered (Will the academic roadmap change? Will it be needed? Will there be additional courses that Penn State will offer?)
* Guidelines
  + Straightforward input data to get output course schedule draft
  + Data input will stay close to faculty preferences as best as possible
    - Faculty: easier input for faster course schedule draft
    - Student: more user friendly and easier to find courses they need to take.
  + Allows for more time for fine tuning to teaching staff preferences
* System design
  + Not necessarily a new system
  + Modified old system into a newer more efficient model
  + Don’t fix what isn’t broken just improve
* Justification
  + Based on client description:
    - Time spent on data input of teacher preferences is inefficient
    - Many constraints that can be easily remedied through implementing a centralized database.
    - Rather than taking the time to creating a completely different system, take the old system and modify it to a more optimized efficient state.