Course Scheduling System
Software
Requirements
Specification

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Revision Sheet

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<td>1</td>
<td>03/23/03</td>
<td>Added things that would not be supported, modified some existing requirements</td>
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<td>2</td>
<td>04/19/03</td>
<td>Added review history, changed wording in overview section</td>
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Review History

At a minimum, the Project Leader shall review this document monthly to ensure the requirements are addressed during each phase of the life cycle. Project Leader reviews and other reviews of this document shall be recorded below.

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<td>Need to clarify what will not be supported</td>
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1. Introduction

1.1 Purpose
This Software Requirements Specification (SRS) is the foundation for agreement between the Associate Dean and Department Chairs of the College of Business Administration at Winthrop University and the developer, the CSCI 680 Team. This SRS will serve as the basis of development and testing for the Course Scheduling System; therefore, the intended audiences for the SRS are both the customer and the development team.

1.2 Scope
The Associate Dean and Department Chairs of Winthrop University's College of Business Administration need a software application that enables them to schedule courses. The Course Scheduling System (CSS) will enable the Department Chairs to enter information such as faculty name, course, time, and a tentative room number into an existing grid that will serve as a course schedule. Each of these users will be able to see a full grid of what has already been entered by others. They may also perform maintenance functions such as adding a new course, instructor, or room. The CSS will present an error (flag) for various conflicting entries. The faculty will be able to use this application to view and print a variety of reports. These reports can be obtained by selecting the type of report desired. The Associate Dean will be able to perform all previously listed functions, and will be able to make any changes or modifications to the main schedule. The primary goal of the CSS is to provide a convenient means for the Department Chairs to schedule courses. This system should drastically reduce the time and complexity of the manual process that is currently in place, allowing the Chairs to initially enter a schedule that will require only a few changes. By seeing a common grid, possible conflicts before they occur, and warning 'flags', this objective will be obtainable. With the implementation and utilization of the CSS, the entire course scheduling process will become more effective and efficient, benefiting the Associate Dean and the Department Chairs.

1.3 Overview
The purpose of this document is to set up anticipated strategy and procedure needed to develop the software required to allow courses to be scheduled in an effective manner.

Section 2 of this document will provide a general description of the Course Scheduling System application.

Section 3 of this document will categorize essential project capabilities and explain them by giving a brief description of each requirement.
2. General Description

2.1 Perspective
The CSS will be an independent web based application. A database will be used for storing data and will be queried when reports need to be generated.

2.2 Function
There will be three levels of access to the CSS. One level will be for the Department Chairs and will allow them to perform functions such as adding a course or faculty member, scheduling a course, and accessing various reports. Another level of access will be for the faculty members and will only enable them to access reports. The final access level will be for the Associate Dean and will allow all previously mentioned functions in the first two levels, plus the ability to make any changes or modifications. The primary function and purpose of the CSS is to allow Department Chairs to create a course schedule. The user will log on to the system, select a semester, and then will be presented with some choices, one of which will be to schedule a course. A course list will appear in the left frame of the page. The user will select a course and will be presented with a pop-up window which enables them to select a room number, instructor, days, and times for the course. The course information can then be saved and will appear on the grid located in the main body of the page. All users can access a variety of reports and the information may be accessed by selecting the type of report they would like to view.

2.3 User Characteristics
The principal users of this application will be the Department Chairs, but will also consist of the Associate Dean and other faculty members. All users will be able to log on and access scheduling reports. The Chairs will be the major users of the application and will easily be able to utilize this system to perform the main function, which is entering scheduling information.

2.4 General Constraints
The CSS will be an independent application that will not interface with any other systems. A separate database will be utilized solely for interacting with this system.

2.5 Assumptions and Dependencies
This system, as previously mentioned, will be a web based application. The system will be designed with the presumption that users will access the system with PC machines that have Windows 2000 or higher and Internet Explorer 5.5 or higher.
3. Specific Requirements

This section is divided into parts that identify required project capabilities and contain subsections specifying the individual requirements associated with these capabilities. Each requirement is assigned a unique identifier to support testing and traceability and is stated in such a way that an objective test can be defined for it.

3.1 Levels of Access

The Course Scheduling System will allow for three different levels of access. The user will log on and the system will determine which access privileges are allotted to that user. These three access levels are described in detail below.

3.1.1 Faculty Level

This set of access privileges is reserved for any faculty other than the Department Chairs and Associate Dean. This access level allows the user, once logged on, to select a semester, and then select from a variety of scheduling reports. The various reports are mentioned in more detail in the following section.

3.1.2 Chair Level

This access level is assigned to the Department Chairs. After logging on to the CSS, the Chairs will have the same options that the faculty level has, but will also be able to schedule a course. Additionally, the system will allow Chairs to perform other functions such as adding a new course or instructor to the system. These administrative capabilities are described in detail in following sections.

3.1.3 Dean Level

This level, as suggested by its name, is reserved for the Associate Dean. This level allows all functions of both previous levels, plus the ability to make any changes or modifications to the main schedule.

3.2 Reports

This section applies to all levels of access and is a function that every user of the CSS will be able to perform. When the user logs on and selects a semester, the system will display a 'view reports' option that allows them to select from various reports which are described below.

3.2.1 Faculty Schedule

This report will display general faculty scheduling information such as course, section, time, professor, etc. and will be available in two formats, described in more detail in the following subsections.
3.2.1.1 Grid
The system will display this form of the faculty schedule report as a grid. The days (M – F) will be displayed across the top of the grid, and the time blocks for that day will be displayed in the column below. Each time block may consist of a course descriptor (CSCI 680) and the name of the faculty member who is scheduled to teach the course.

3.2.1.2 List
The system will also be able to display faculty schedule information in the form of a list. Column headings will include course, section, time, days, professor, room #, and capacity. All courses will be listed in the first column, and the corresponding information for those courses, if applicable, will appear in the row next to the course.

3.3.1.3 Sorting Criterion
The system will allow both the faculty schedule grid and list data to be displayed by department, by discipline, by professor, or show information for all professors.

3.2.2 Professor Course Loads
This report will be available by list only. It will display all of the courses that a given professor is slotted to teach. Specifically, it will display the professor's name, course descriptor (CSCI 207), time, credit hours, and days of the course.

3.2.2.1 Sorting Criterion
The system will be able to display the professor course loads list by department, by discipline, by professor, or show corresponding courses for all professors.

3.2.3 Room Grid
The system will display this report, as the name suggests, as a grid. There will be a grid for Monday/Wednesday/Friday and one for Tuesday/Thursday. This grid will display time slots across the top, room numbers down the left side, and may contain scheduling information in each block/slot. Specifically, each time slot may include a course descriptor (QMTH 206) and a faculty name.

3.2.4 Print Option
The system will be capable of printing any of these reports on demand, as selected by the user.

3.3 Schedule a Course
This option is available to the Associate Dean and Department Chair access levels only. Once logged into the CSS and a semester has been selected, the user can select 'schedule courses'. After this selection has been made, a frames page displays courses in the left frame and the
current schedule in the main frame. The user can then select a course from the left frame for which they would like to enter scheduling information. When the course is selected, the system displays a dialog box which contains course details and the selection lists for room, instructor, day(s), and time of the course with the saved course information as the default values.

3.3.1 Selecting Room Number
The user will be able to choose a room number for the selected course from a drop down list. This will include a 'COASTAL' room as well.

3.3.2 Selecting Instructor
The user will be able to select a faculty member as the instructor of the selected course from a drop down list. There will also be a 'STAFF' instructor listed in this list.

3.3.3 Selecting Days
The user will be able to select the day(s) for the chosen course from a drop down list.

3.3.4 Selecting Time
The user will choose a time slot for the selected course from a drop down list.

3.3.5 Warning Flags
The system will display a 'warning flag' to the user when a potential scheduling conflict is detected. Possible conflicts could be: A course has already been scheduled for a slot that the user is attempting to reserve, more than nine classes scheduled for a particular time slot, instructor has been scheduled for more than room in one time slot, etc.

3.3.6 Saving a Course
Once the course information has been selected, the user must click on 'save' to confirm the selection. After this is done, the system will close the dialogue box, refresh the main frame with the scheduling grid, and display the saved information in the appropriate place on the grid.

3.3.7 Editing a Scheduled Course
The user will be able to select a course from the current schedule grid located in the main frame of the page. Once the course is selected, the system will open the same dialog box that appears when the course was originally scheduled, and allow changes to be made and saved.

3.3.8 Deleting a Scheduled Course
A course that has already been scheduled can be deleted from the main scheduling grid by clicking an 'x' beside the course name in the grid.
3.3.9 Accessing Professor Information From Schedule Grid
Scheduling information for a particular professor can be accessed by clicking the professor's name in the main scheduling grid.

3.4 Maintenance
This function is available to the Chairs and Associate Dean. Subsequent to logging in, the user will be able to select 'system maintenance'. The system will then present the user with some choices as described below.

3.4.1 Add Course
Upon selecting 'update information', the user may then select 'add course'. The system allows the user to add a new course and section number.

3.4.2 Remove Course
The system also lets the user remove a course from their course list should the course no longer be offered.

3.4.3 Add Instructor
Users will be able to add new faculty members/instructors by selecting 'add instructor'.

3.4.4 Remove Instructor
The user will be able to remove a faculty member from the system by selecting 'remove instructor'.

3.4.5 Add Room
The system enables a user to add a new room to the list of rooms.

3.4.6 Remove Room
This will allow the user to remove a room if necessary.

3.4.7 Add Semester
The user may add a new semester to the system.

3.4.8 Remove Semester
A semester may be removed from the system.
3.5 Other Requirements

The CSS will be a web based application and must operate on Windows based machines using Internet Explorer 5.5 or higher.

3.5.1 Addressed Constraints

This system shall not support the following: Scheduling any one course in different rooms, selection of days/time arbitrarily, and 'off grid scheduling'. Also, the accessibility of data from the previous year is unavailable at this point, and will not be accessible through the CSS. Finally, the CSS will not support summer semester scheduling at this time. The system will be flexible, thus allowing for this upgrade to be implemented in the future.
4. Appendix A  Acronyms, Definitions, and References

A.1  Acronyms

SRS  Software Requirements Specification

A.2  Definitions

Plan  Defined set of procedures and the required resources to implement a policy.

Process  “A sequence of steps performed for a given purpose.” [IEEE90]

Software  “Computer programs, procedures, and associated documentation and data pertaining to the operation of a computer system.” [IEEE90]

Specification  “A document that specifies, in a complete, precise, verifiable manner, the requirements, design, behavior, or other characteristics of a system or component, and, often, the procedures for determining whether these provisions have been satisfied.” [IEEE90]