Course Registration System

Version 1.0

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| --- | --- | --- | --- |
| **Table** | **Version** | **Description** | **Author** |
| 1/Dec/98 | Draft | Initial Draft | Zeeshan Asghar |
| 13/Dec/98 | 1.0 | Minor revisions following Peer Review.  Added performance requirements. | Zeeshan Asghar |

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**1 Introduction**

**1.1 Purpose**

The purpose of this document is to define the high-level requirements of the Wylie course registration (C-Registration) system in terms of the needs of the end users.

**1.2 Scope**

This Vision Document applies to the Wylie course registration system, which will be developed by the Wylie College Information Systems (IT) department. The IT department will develop this client-server system to interface with the existing course catalog database.

The C-Registration System will enable students to register for courses on-line. The C-Registration System allows professors to select their teaching courses and to maintain student grades.

**1.3 Definitions, Acronyms and Abbreviations**

**1.4 References**

Applicable references are:

# 1 System Business Case for the C-Registration System, WyIT388, DRAFT, 1998, Wylie College IT.

# 2 Course Billing Interface Specification, WC93332, 1985, Wylie College Press.

# 3 Course Catalog Database Specification, WC93422, 1985, Wylie College Press.

# 4 Stakeholder Requests Document for the C-Registration System, WyIT389, V1.0, 1998, Wylie College IT.

# 5 Glossary for the C-Registration System, WyIT406, V1.0, 1998, Wylie College IT.

# 6 Requirements Attributes Guidelines for the C-Registration System, WyIT404, V1.0, 1998, Wylie College IT.

# 2 Stakeholder and User Descriptions

This section describes the users of the Wylie Course Registration System. There are 3 types of users of the C-Registration System; the Course Registrar, the Students, and the Professors.

## 2.1 Market Demographics

The University User Community is a large sophisticated community that demands the flexibility and response time that an on-line course registration can provide.

The users are educated, computer literate, and in most cases own personal computers in their homes. The ability to register for courses via personal computers and to review their grades on-line would greatly streamline course registration.

The Course Register works out of the College Admin Headquarters building and is connected to the campus LAN. The students and professors have free access to the LAN through personal computers situated in the campus library and student lounge building.

The initial release of C-Registration will be limited to Wylie College. Marketing subsequent releases to schools, colleges, and universities is under consideration by the Wylie IT Department. As a result, Course Registration will be designed to be expandable and all user community data (i.e. College Name) will be table driven and easily modifiable upon system installation.

## 2.2 Stakeholder Summary

|  |  |  |
| --- | --- | --- |
| **Name** | **Represents** | **Role** |
| IT Executive | IT Department and Wylie College as whole. | Responsible for project funding approval. Monitors project progress. |
| Registrar | The office of the registrar, administrative and data entry personnel. | Ensures that the system will meet the needs of the registrar, who has to manage the course registration data, including professor and student databases. |
| Student | Students | Ensures that the system will meet the needs of students. |
| Professor | Professors | Represents the interests of the faculty (professors). |

**2.3 User Summary**

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Stakeholder** |
| Registrar | Manages the database of professors and students, opens and closes courses to registration. | self-represented |
| Student | Registers for courses, queries for grades and other course information. | self-represented |
| Professor | Selects courses to teach.  Enters student grades. | self-represented |

## 2.4 User Environment

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## 2.5 Stakeholder Profiles

### **2.5.1****IT Executive**

|  |  |
| --- | --- |
| **Representative** | John Whitewood, IT Department Head |
| **Description** | Approval Authority |
| **Type** | Understands the college's financial status, and the long term vision of the Board Of Governors. |
| **Responsibilities** | Represents the IT Department and the Board Of Governors.  Monitor's project status, and has authority over budget approval.  Ensures that the project meets short term and long term goals of the college.  Plans for potential re-sale opportunities, and long term maintenance of the system. |
| **Success Criteria** | Success is completion of the project within approved budget, and a demonstrated reduction in registrar workload (and therefore reduced cost for the projected future).  There must also be a general perception by the Board of Governors that the project meets user needs. The system should be easily modified for use by other colleges, for potential re-sale opportunities.  The stakeholder is rewarded by receiving recognition by the Board of Governors. |
| **Involvement** | Project reviewer.  Budgetary approval signatory.  Involved in staff performance reviews. |
| **Deliverables** | None. |
| **Comments / Issues** | None. |

### **2.5.2 Registrar**

|  |  |
| --- | --- |
| **Representative** | Karen Hansen |
| **Description** | User |
| **Type** | The Registrar is typically a college-educated professional with full computer skills. The Registrar is trained and experienced with the use of the current batch-oriented registration . |
| **Responsibilities** | The Registrar is responsible for administering course registration for each school term.  This includes supervising administrative and data entry personnel. |
| **Success Criteria** | The registrar’s primary responsibility will be maintaining student and professor databases, and opening/closing courses to registration.  The registrar’s office will also be required to perform data entry for students and professors without online access to the system.  A successful system is one which substantially reduces the workload on administrative/data entry staff.  The primary tasks performed by the registrar must be easy to learn, and quick to perform.  Also, the system must have good availability, and reliability, and security.  The stakeholder is rewarded by reduction in onerous data entry workload, simplification of existing tasks, and quick convenient access to required information. |
| **Involvement** | Project reviewer – especially related to functionality and useability of features required by the Registrar staff. |
| **Deliverables** | None |
| **Comments / Issues** | None. |

### **2.5.3 Student**

|  |  |
| --- | --- |
| **Representative** | Jane Austen |
| **Description** | User |
| **Type** | Student Representative to the Board of Governors. |
| **Responsibilities** | Ensure that the system will be acceptable to students, both in terms of ease of use and also performance/reliability.  Up to 2000 students will use the C-Registration System each school term to register for courses and to review their final grades. The students are typically educated, computer literate, and have access to the Internet. It is expected that each term 10% of the students will be registering at Wylie for the first time and will be unfamiliar with the course registration process. |
| **Success Criteria** | Success is when students using the system for the first time, under normal to heavy usage levels, report that the system is easy to use and worked well.  The stakeholder is rewarded by receiving recognition by the Board of Governors for his/her involvement, and by being re-elected for another term. |
| **Involvement** | Project reviewer – especially features affecting students and usability concerns. |
| **Deliverables** | None. |
| **Comments / Issues** | None. |

### **2.5.4 Professor**

|  |  |
| --- | --- |
| **Representative** | Dr. Susan Smythe |
| **Description** | User |
| **Type** | Faculty representative. |
| **Responsibilities** | Ensures that the system will be acceptable to professors, both those with and without computer access.  The Professors that will use C-Registration are educated, computer literate and familiar with the Wylie registration process. It can be assumed that not all Professors have personal computers in their home and that not all Professors have Internet access. |
| **Success Criteria** | Success is when most, if not all, professors are able and willing to use the system to select courses, and enter grades, and when professors report that students are no longer calling to ask about final grades.  Success is also when professors are able to query for most course registration data online.  The stakeholder is rewarded by receiving peer recognition from other faculty. |
| **Involvement** | Project reviewer – especially usability of features affecting professorial functions, such as course selection and grade entry. |
| **Deliverables** | None. |
| **Comments / Issues** | None. |

## 2.6 User Profiles

**2.7 Key Stakeholder / User Needs**

A representative sampling of students, professors, as well as the current Course Registrar completed a User Survey to determine the user problems with the existing course registration system and to solicit user input on improvements. The complete survey results are included in the Stakeholder Requests Document [4]. A summary of the survey results are listed below in order of relative importance from high to low:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Current Solution** | **Proposed Solutions** | | |
| **Student Course Registration** | High | **Student Course Registration is slow and inefficient.** | Currently students must complete a course registration form and submit it to the Registrar. The Registrar takes up to 2 weeks to process the form and another week to send the confirmation back to the student. At this point, any schedule changes due to full courses or student preference require the entire three week process to be repeated. This provides students limited flexibility in selecting their schedule of courses. | Students would like to have online access to quickly determine course availability and assigned professors. | | |
| **Early access to Student Grades** | Medium | **Long delay to get grades, continuous queries to professors.** | The final report cards are typically mailed out to the students 8 weeks after the start of the examination period. During this time, students continually phone their professors in attempts to find out their marks sooner | Online access to individual course grades was a recommendation from most students completing the survey. | | |
| **Low clerical costs** | Medium | **Clerical effort is time intensive and costly.** | The Registrar and 2-3 temporary clerical hires take 400 – 500 hours each term to process the course registration paperwork. Much of this time is spent entering information into the main course registration database and then re-registering students into other courses to resolve schedule conflicts and course availability problems. | Student access to the course registration system would effectively reduce this effort to zero. | | |
|  |  |  |  |  |  |  |

## 2.8 Alternatives and Competition

The user community was unaware of any viable alternatives or off-the-shelf solutions. The user community supported the strategy that the system should be developed internally by the College in order to reduce costs, ensure appropriate functionality, and to guarantee continued support and maintenance on the system.

# 3 Product Overview

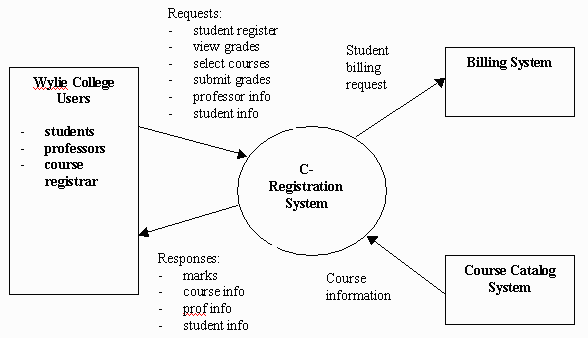
This section provides a high level view of the C-Registration System capabilities, interfaces to the external Billing System and Course Catalog Data Base System, and the system configuration.

## 3.1 Product Perspective

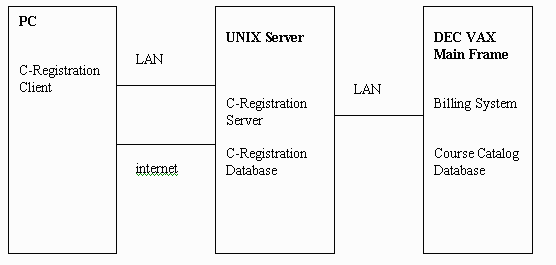
The C-Registration System will replace the existing mainframe course registration system at Wylie College. The new system will interface with the existing Billing System and Course Catalog Database System as shown in the context diagram below (see Figure 6.1.1).

The C-Registration System will consist of a client component and server component as illustrated in Figure 6.1.2. The server component resides on the Wylie College UNIX Server. The server component must interface with the Billing and Course Catalog Database Systems on the College DEC VAX Main Frame. This interface is supported by an existing Open SQL Interface.

The client component resides on a personal computer. The College PCs will be setup with the client component installed. Any non-college PCs must download the client software from the UNIX Server via the Internet. Once the client component is installed on the PC, the user may access the C-Registration System from the PC through the College LAN or Internet. A valid ID number and password must be entered in order for access to be granted.



**Figure 6.1.1 C-Registration System Context Diagram**



**Figure 6.1.2 C-Registration System Overview**

**3.2 Summary of Capabilities**

The table in this section identifies the main capabilities of the C-Registration System in terms of benefits and features. The features are further described in section 7 of this document. Refer to the Glossary [5] for a description of terms.

|  |  |
| --- | --- |
| **Customer Benefit** | **Supporting Features** |
| Up-to-date course information | The system accesses the Course Catalog Database for up-to-date information on all courses offered at Wylie College.  For each course, the Students and Professors may review the course description, prerequisites, assigned teachers, class locations, and class times. |
| Up-to-date registration information | All course registrations are immediately logged in the Registration Database to provide up-to-date information on full or cancelled courses. |
| Easy and timely access to course grades | Students can view their grades in any course simply by providing their user ID and password.  Students may access the registration system from any College PC or from their home PC via the internet.  Professors enter all student marks directly into the Registration Database from their PCs. |
| Access from any College PC | Students may access the registration system from any College PC or from their home PC via the internet.  Installation of the client component of the C-Registration System on a PC is an easy to follow process using the internet. |
| Easy and convenient access from your PC at home | Students may access the registration system from any College PC or from their home PC via the internet. |
| Secure and confidential | A valid user ID and password is required to gain access to the C-Registration System.  Student report card information is protected from unauthorized access. |
| Instant feedback on full or cancelled courses | All course registrations are immediately logged in the Registration Database to provide up-to-date information on full or cancelled courses. |

**3.3 Assumptions and Dependencies**

The following assumptions and dependencies relate to the capabilities of the C-Registration System as outlined in this Vision Document:

• The existing Billing and Course Catalog Database Systems which reside on the College DEC VAX Mainframe will continue to be supported until at least 2005.

• The external interfaces of the Billing and Course Catalog Database Systems are as defined in [2] and [3] and will not be altered.

• It is assumed that the College will continue to operate and support the existing UNIX Server and the DEC VAX Mainframe until at least 2005.

• It is assumed that additional funding will be available by 2005 to replace the legacy Billing and Course Catalog Database Systems.

• Implementation of the new registration system in time for the January 2000 school term is dependent upon funding approval by March 1st, 1999.

## 3.4 Cost and Pricing

Due to funding constraints, the costs for developing the system must not exceed $1,200,000.

It is anticipated that existing computers of the college will be used as the target machines and that no hardware budget is required.

## 3.5 Licensing and Installation

There are no licensing requirements for V1.0 of the system, as it will be available only to Wylie College. Installation of the client component must be available via diskette, CD, or downloadable from the Internet. Installation of the server component must provide the options for retaining the existing Registration Database (without loss of any data) or generating a new Database.

# 4 Product Features

This section defines and describes the features of the C-Registration System. Features are the high-level capabilities of the system that are necessary to deliver benefits to the users.

## 4.1 Logon

Students, professors, and the Course Registrar shall provide a valid ID and password for entry to the C-Registration System. Users are assigned their ID and a temporary password at the time they apply for admission to the College. The system shall enable a user to change their temporary password.

## 4.2 Register for Courses

The system shall display available courses to the student upon request. The student shall be able to query based upon course name, course code, and department. The system shall accept course registrations from students and shall validate based upon course availability, schedule conflicts, and completed pre-requisite courses. The system shall notify the student immediately if the course registration does not succeed.

The system shall allow the student to change course selections prior to the end of the registration period.

## 4.3 Course Cancellations

The system shall allow the Registrar to cancel courses. The Registrar typically reviews all courses at the end of the registration period and cancels courses that have no assigned Professor or which have less than 3 registered students. The Course Registrar notifies students of cancelled courses by telephone or mail.

## 4.4 Student Billings

The system shall send notifications to the Billing System following closure of the Registration period. These notifications shall include student name, address, course selections, and payment due.

## 4.5 Enter, Update, and View Professor Information

The system shall accept and update professor information, including name, address, phone, fax, and email address. Professor information shall be available to the Professors and Course Registrar for viewing.

## 

## 4.6 View Student Grades

The system shall enable a student to view one course grade or their entire report card. The system shall protect the student grade information from access from any user other than the student and the Professors.

## 4.7 Select Courses to Teach

The system shall enable Professors to sign up for courses to teach prior to the end of the Registration period.

## 4.8 Enter, Update, and View Student Information

The system shall accept and update student information, including student ID, name, address, phone number, and email address. Student information shall be available to the Professors and Course Registrar for viewing. The system shall ensure that a student only has access to his or her own student information. The Registrar maintains student information.

## 4.9 Record Student Grades

The system shall accept, validate, and retain student grades entered by the Professor.

## 4.10 View Course Catalog Information

The course catalog information maintained in the Course Catalog Database shall be displayed to the user upon request. Users shall be able to query for information based upon course name, course code, professor name, and department.

## 4.11 View Course Schedule

The system shall display the complete course schedule for a specific student upon request by that student.

## 4.12 Monitor for Course Full

The system shall ensure that no course is filled beyond the limit of 10 students.

# 5 Quality Ranges

This section defines the quality ranges for performance, robustness, fault tolerance, usability, and similar characteristics for the C-Registration System

**Availability**: The System shall be available 24 hours a day, 7 days a week.

**Usability**: The System shall be easy-to-use and shall be appropriate for the target market of computer-literate students and professors.

**Usability**: The System shall include online help for the user. Student and Professor Users should not require the use of a hardcopy Manual to use the System.

**Maintainability**: The System shall be designed for ease of maintenance. All college-specific data should be table-driven and modifiable without recompilation of the System.