

Software Plan

Siena College Catalog Database

28 September 2004

Requested by:

Ms. Kate Zimmerman
Academic Program Administrator
Office of Academic Affairs
Siena College

Mr. Brian Smith
College Webmaster
Office of Enrollment and Planning Technology
Siena College

Spartacus Computing Solutions

Spartacus_Computing@hotmail.com

Prepared by:

Michael Cervone, Web Designer
Thomas Hackett, Librarian
Sean Hannon, Software Consultant
Sara Pagliaro, Team Leader
John Sawicki, Systems Administrator

Presentation Information: 29 September 2004
8:15 AM
Roger Bacon 328

**Siena College Catalog Database
Software Plan**

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1.1 Problem Definition:

Due to the tedious task for making changes to the college course catalog and then posting it on the web, our company has been requested by Ms. Kate Zimmerman and Mr. Brian Smith to develop a program that will be able to have all catalog changes made electronically. The software will use a database for the catalog entries and have proper read and write authorization for different users. Also, our clients requested that it be able to be updated on the web in real-time and that the database will be able to display the original catalog and a new version with changes at the same time, allowing for easy comparisons to be made.

1.2 System Justification:

The purpose of our software is to ease the difficult and timely process of updating and maintaining the Siena College Catalog that our clients, Ms. Zimmerman and Mr. Smith must deal with annually. By designing and developing a database to store the catalog's information, Ms. Zimmerman will no longer have to send out multiple hard-copies of the catalog to the numerous faculty members involved in updating each section. The database will also ease the job of Mr. Smith, who will no longer have to change the online version of the catalog with each update.

1.3 Goals for the System and on the Project:

The goal for this project is to create software that will implement an online database for the Siena College course catalog. The database should allow for authorized users to make necessary changes to the catalog, display those changes in a user-friendly, web-based format, and have the capability to be used by the printing company when the new catalog is printed.

1.4 Constraints on the System and on the Project:

Presently, there are only two constraints on the project. First, there is limited manpower for software development with only five team members. Secondly, the project must follow a specific development schedule, as described in *Section 2.10: Manner of Demonstration and Delivery*.

1.5 Functions to Be Provided:

Our project will store the text of both the current year and the revised versions of the Siena College Catalog. Changes to the catalog will be logged, as well as information about who made the changes and when the changes occurred. An indication of whether any changes have been approved will also be included. The GUI will be user-friendly and allow certain users to compare any changes made to the current version of the catalog.

- 1) A database that will store all of the course descriptions in an organized manner;
- 2) The GUI will import matching old and new material from the database and will display them side-by-side in a user-friendly way;

3) We will keep documentation on all meetings with Ms. Zimmerman and Mr. Smith and post them on our website for referral.

1.6 User Characteristics:

The main users will be all college faculty and staff who must make changes to the course catalog. Ms. Zimmerman will be using this to ensure that all catalog changes are made in a timely, efficient manner, and Mr. Smith will be using this tool to maintain the web version of the course catalog. Since this will be a web-based database system, users will be required to use Internet Explorer and/or Netscape.

1.7 Development/Operating/Maintenance Environments:

The software will be developed using the Siena College Software Engineering workstations provided to us. The operation of this system will be available to all faculty and staff involved in the updating of the Siena College Catalog each year. Any computer with Internet Explorer or Netscape web browsers will have the capability of viewing the contents of the database without the ability of making changes to the system. The maintenance of this system will be determined at a later time.

1.8 Priorities of System Feature:

One of the most important features of this system requires that security is applied to the information within the course catalog database. Certain users must have access to write to the database, while others can only have access to read the content of the database. This will be accomplished by requiring usernames and passwords in order to access the system. Another priority is that the system will utilize a user-friendly, web-based environment. This will ensure that users can access the course catalog database with little or no difficulty and easily compare old entries and new entries on a computer monitor.

1.9 System Acceptance Criteria:

The program will allow for a number of functions and will, at minimum, allow:

- 1) Users to make changes to the course catalog, using specified protocols;
- 2) For ensuring that all changes go through the proper channels, and are verified at each level;
- 3) The storage of the course catalog into a database, for ease of change;
- 4) Users to post the course catalog to the Web, and have the ability to access it in a real-time fashion;
- 5) Users to compare old and new versions of a course definition;
- 6) Users to send an electronic copy of the files to the printer of the course catalog.

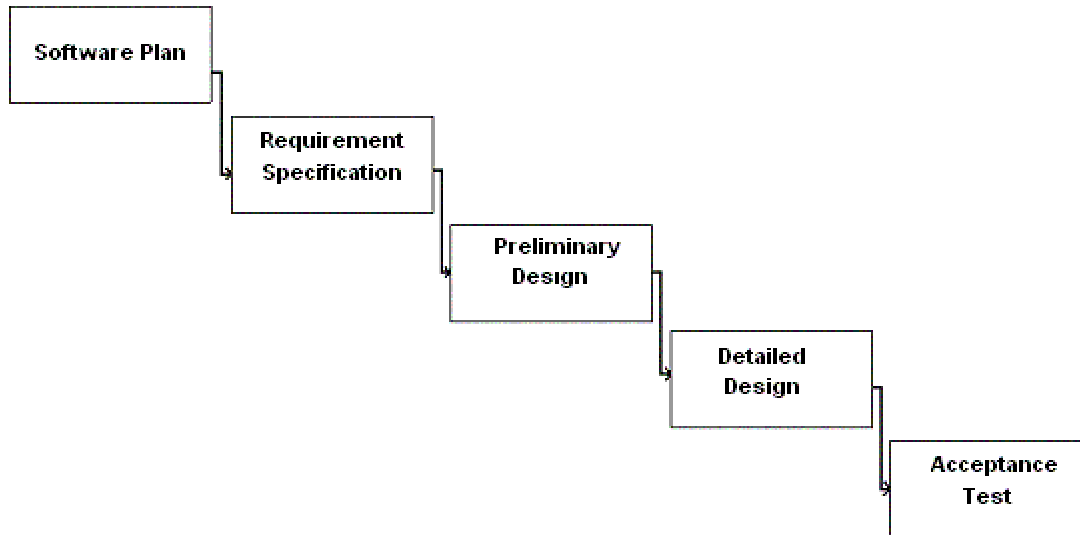
1.10 Sources of Information:

The major source of information for this segment of the project resulted from meeting with our clients, Mr. Smith, and Ms. Zimmerman. Other sources of information include Dr.

Lederman's class lectures, the Software Engineering class textbook *Software Engineering: A Practitioner's Approach* by Roger S. Pressman, discussions with other class members, especially *IniTech*, and previous Software Engineering teams' projects, specifically *Mirage Incorporated*.

2.1 Life-cycle Model

The Life Cycle Model that our team is following is the Classic Life Cycle model, also known as the Waterfall Model.



Software Plan

The project is initialized during the Software Plan. This is where the problem that needs to be solved is defined and a primary plan of action is established.

Requirement Specification

Throughout this phase, information is gathered from the clients and project requirements are established.

Preliminary Design

During this phase, the team analyzes the problem and begins to design software to solve it. To do this, the team must first begin to understand the nature of the problem, and what must be done to solve it in the implementation of the software.

Detailed Design

After the Preliminary design is complete, the team must begin to code the design and run preliminary tests on the product.

Acceptance Test

During this stage, final testing is completed and the software is delivered to the customers. The team must provide support for their software and be available to receive feedback on the product.

2.2 Organizational Structure:

Spartacus Computing Solutions is comprised of the following members:

<u>Name</u>	<u>E-mail Address</u>	<u>Phone Number</u>
Michael Cervone	michael.cervone@students.siena.edu	(518) 782 - 6022
Thomas Hackett	thomas.hackett@students.siena.edu	(518) 782 - 6062
Sean Hannon	sean.hannon@students.siena.edu	(518) 782 - 6039
Sara Pagliaro	sara.pagliaro@students.siena.edu	(518) 782 - 6185
John Sawicki	john.sawicki@students.siena.edu	(518) 782 - 6456

Spartacus Computing Solutions is organized as follows for the Siena College Catalog Database project:

Sara Pagliaro – Team Leader
 John Sawicki – Systems Administrator
 Thomas Hackett – Librarian
 Michael Cervone – Web Designer
 Sean Hannon – Software Consultant

The team structure of Spartacus Computing Solutions is controlled decentralized. Although a team leader is defined, decisions on problems and approach are made by group consensus. There is no formal hierarchy.

The work assignment for each member is as follows:

Team Leader – Organizes meetings and interviews for the team, as well as between the team and the client; guides the team throughout the semester.

Systems Administrator – Maintains the team users' accounts and is responsible for software administration.

Librarian – Maintains all team documents and records of all team and client meetings.

Web Designer – Creates and maintains the project web page.

Software Consultant – Aids the Systems Administrator in use and training of all necessary software for the project.

2.3 Preliminary Staffing and Resource Requirements:

Our staffing requirements are the team members listed above. Each team member will be involved in the development process of the course catalog application, with emphasis in their related fields (as denoted by their job title).

Our required software resources will include a number of development and management applications. A database management system such as Oracle 9i will be needed to store and modify the course catalog. Also, a web-page editor such as Dreamweaver is necessary, as the application will have a web-based component. We may also use a Hypertext

Preprocessor (PHP) editor, Visual C++, and Visual Basic, and other such development programs as needed.

The hardware resources we require include computer systems, printers, and services.

Our primary resources include those directly involved with the project: Mr. Brian Smith (College Webmaster), Ms. Kate Zimmerman (Academic Program Administrator), and Dr. Timothy Lederman, our Software Engineering professor.

2.4 Preliminary Development Schedule (Gantt Chart):

The Preliminary Development Schedule (Gantt Chart) for this project can be found on page 10 of this document.

2.5 Project Monitoring and Control Mechanisms:

In addition to weekly client meetings, the project team members will meet regularly to discuss where the project stands and to decide upon the appropriate steps to take in order to meet the clients' desired requirements. The project team will assess the client's responses to the team's documents and presentations throughout the semester to verify that the ideas of the project team complement those needs of the clients. These documents and presentations will also be used as a method of monitoring progress on the project.

Throughout our development, we will be continually testing our system. All team members will have specific tasks and jobs relating to the project as well as the capabilities of assisting other team members in accomplishing tasks. If at any time either the project team or clients establish that the program is not meeting the necessary needs, the project team will use the proper methods to correct the problem.

2.6 Tools and Techniques to Be Used:

Computers with Dreamweaver, Microsoft Project, Microsoft Office, C++, and Oracle, along with other needed software will be used. Our team will most likely be using Dreamweaver and PHP to develop our course catalog web-based application, and C++ for the software on which the web application will run. C++ will most likely also be used for the course catalog editing software. We will also be using a database management tool like Oracle. Other such development tools may be used as needed.

2.7 Programming Languages:

For the development of the Siena College Catalog Database project, we will be using Microsoft Visual C++ and PHP, and for our website we will use HTML and Dreamweaver.

2.8 Testing Requirements:

As our software is being manufactured, it will go through a series of tests. These tests will be conducted by Spartacus Computing Solutions team members and other students, as well as with help from Dr. Lederman.

2.9 Supporting Documents Required:

Supporting documentation will be provided to our client on the following dates:

- 1) 28 September 2004 – Problem Definition/Project Plan
- 2) 1 November 2004 – Software Requirements Specifications
- 3) 6 December 2004 – Preliminary Design

2.10 Manner of Demonstration and Delivery:

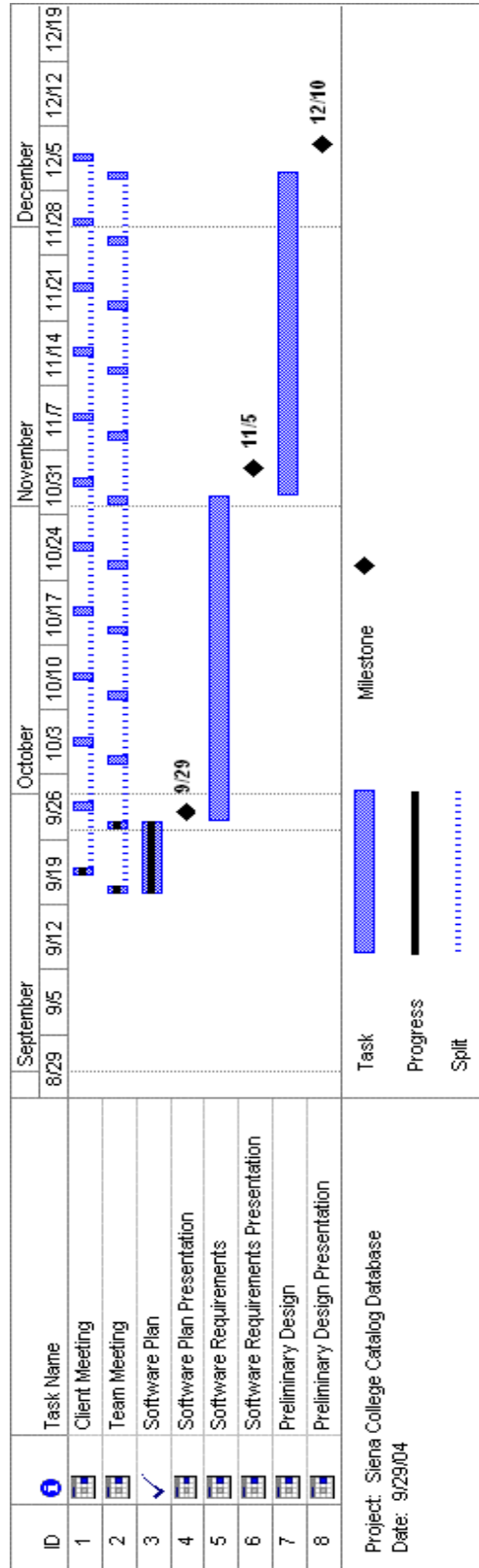
Throughout the development of this project, several documents will be written and several presentations will be offered. The presentations will consist of PowerPoint slideshows, speeches, demonstrations, and handouts. The purpose of the presentations will be to ensure our clients' requirements are met and to show what we have completed to date. Dates of presentations for the first semester are as follows:

- 28 September 2004 – Problem Definition/Project Plan Documents
- 29 September 2004 – Problem Definition/Project Plan Presentation
- 1 November 2004 – Software Requirements Specification Documents
- 3-5 November 2004 – Software Requirements Specifications Presentation
- 6 December 2004 – Preliminary Design Documents
- 8-10 December 2004 – Preliminary Design Presentation

2.11 Sources of Information:

The major sources of information for this project will stem from meetings with our two clients, Ms. Zimmerman and Mr. Smith, as well as from Dr. Lederman's software engineering lectures. In addition to client meetings and class lectures, our team will gather information from Roger S. Pressman's book *Software Engineering: A Practitioner's Guide*, discussions with other class members, and previous Software Engineering teams' work, especially from *Mirage Incorporated*.

A.1 Gantt Chart:



A.2 Glossary of Terms:

Code – Symbolic arrangement of data or instructions in a computer program, or a set of such instructions.

Controlled Decentralized – An organizational structure for teams, in which a team leader is defined, but all problem solving and decision making is the responsibility of the group.

Database – An information management system used for storing and retrieving related data.

Dreamweaver – A program used in the development of web pages.

Gantt Chart – A graphical-based, progressive timeline containing relevant dates, often used with regard to planning and tracking a project.

GUI – *Graphical User Interface*: A user interface based on graphics (icons, pictures, and menus) instead of text; uses a mouse as well as a keyboard as an input device.

HMTL – *Hypertext Transfer Markup Language*: A markup language used to structure text and multimedia documents and to set up hypertext links between documents, used extensively on the World Wide Web.

Hypertext – A computer-based text retrieval system that enables a user to access particular locations in web pages or other electronic documents by clicking on links within specific web pages or documents.

Internet – An interconnected system of networks that connects computers around the world via the TCP/IP protocol.

Java Script – A language used in the development of web pages.

Linear Sequential Model – Sometimes called the *classic life cycle* or the *waterfall model*, this model, originally developed by W.W. Royce, suggests a systematic, sequential approach to software development that begins at the system level and progresses through analysis, design, coding, testing, and support.

Network – An openwork fabric or structure in which cords, threads, or wires cross at regular intervals.

Open-Source – A method and philosophy for software licensing and distribution designed to encourage use and improvement of software by making the code freely available.

PHP – Hypertext Preprocessor (server-side scripting language).

Protocol – A standard procedure for regulating data transmission between computers.

Software – Written programs, procedures, or rules and associated documentation pertaining to the operation of a computer system and that are stored in read/write memory.

SQL – *Standard Query Language*: A language used in the creation and maintenance of databases.

Username – A system created login for users.

Web-based – Uses the internet to access the system.

Michael Anthony Cervone

Present Address

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Loudonville, NY 12211
(518) 782-6022
Michael.Cervone@students.siena.edu

Permanent Address

175 Columbus Ave.
Valhalla, NY 10595
(914) 949-3672

OBJECTIVE

To obtain a position in the field of Computer Science; special interest in Computer Security.

EDUCATION

Siena College, Loudonville, NY
B.S. in Computer Science and Mathematics with a Minor in Criminal Justice, May 2005
Current Overall GPA: 3.79/4.0 Current GPA in Major: 3.87/4.0
Presidential Scholar

EXPERIENCE

CATI System Administrator, Siena Research Institute, Siena College, Loudonville, NY, Spring 2001-Spring 2002

- Set up and configured Sawtooth Technologies Computer-Assisted Telephone Interviewing (CATI-3) software on a server/client environment using Windows 95.
- Automated SRI surveys on the CATI software package.
- Import sample phone numbers from Microsoft Excel and export data to SPSS 7.0 for data analysis.

OTHER WORK EXPERIENCE

Resident Assistant, Hennepin Hall, Siena College, Loudonville, NY, Summer 2003-Current

- Develop community and mediate conflicts within hall of about 80 men
- Design and implement programs after actively accessing students' needs
- Provide on call crisis response, counseling, and information to students
- Interview and evaluate future RA and RD candidates

Caterer, Sodexho, Siena College, Loudonville, NY, Fall 2002-Current

- Setup, Cater and breakdown events on and off campus
- Pickup events at end of day and close building

Valet, Doorman, Porter, Crystal Towers Apartment Buildings, White Plains, NY 10601, Summer 1999-Current

- Valet park cars in an indoor garage
- Door building during both day and night shifts
- Do maintenance around complex when needed
- Close building after night shift

COMPUTER SKILLS

- Environments: Windows 95/98/Me/NT/2000/XP, MacOS
- Databases: MS SQL Server 6.5, 7.0 and 2000, Oracle 8.0 (WebDB, OQL)
- Languages: C++, C, JavaScript, HTML, XML, SQL, VB, MIPS Assembly, Scheme
- Other: Internet, Microsoft Office Tools, various software packages

LEADERSHIP ROLES

Treasurer, Student Events Board (SEB), Spring 2002-Spring 2003

Parliamentarian, Student Events Board (SEB), Spring 2003- Current

Facilitator, New Horizon Freshman Retreat, Fall 2003

Student Finance Committee (SFC), Spring 2002-Spring 2003

Staff Writer, Promethean (College Newspaper), Fall 2003-Current

Volunteer, Valhalla Volunteer Fire Department, Fall 2002-Current

Thomas J. Hackett

Present Address:

Siena College, SPOB 3544
515 Loudon Road
Loudonville, NY 12211
(845) 656-6488
E-Mail: Thomas.Hackett@students.siena.edu

Permanent Address:

60 Lakeview Dr
Brewster, NY 10509
(845) 279-6926

Objective:

To obtain the position in the field of computer science.

Education:

Siena College
Loudonville, NY 12211

Experience:

Brewster Ice Arena, Brewster, NY, November 2000 – Present

Assistant Manager, December 2003 – Present

- Supervised the workers making sure they did their jobs.
- Assisted in unloading deliveries.
- Made sure the rink was clean before I left.
- Counted out the registers for the day

Office Worker, December 2001 – December 2003

- Rang in customers who wanted to ice skate.
- Registered customers for lessons and leagues.
- Worked with customers about their complaints.

Skate Guard, December 2000 – December 2003

- Skated during public session to ensure safety.
- Cleaned the arena throughout the day.
- Assisted in unloading deliveries
- Gave customers rental skates.

Local 1 Stagehands, New York City, June 2002 – August 2003

Electrician, June 2003 – August 2003

- Ran cable to lighting units.
- Load and unload trucks.
- Focused lights.

Carpenter, June 2002 – August 2003

- Loaded and unloaded trucks.
- Built stages from plywood.

Aversano's Pizza and Restaurant, Brewster, NY, 1998 – 2000

Cashier, November 1999 – April 2000

Waiter, May 1998 – January 2000

Activities:

Siena College Rugby Football Club, 2002-present

SEAN HANNON

Present Address

Siena College, SPOB 3552

515 Loudon Road

RI 02817

Loudonville, NY 12211

sean.hannon@students.siena.edu

Permanent Address

54 Kimberly Drive

West Greenwich,

Cell Phone: (401)-487-2802

OBJECTIVE

To obtain a job in the technology field.

EDUCATION

Siena College, Loudonville, NY, 2001-Present

B.S. Computer Science, Mathematics Minor

COMPUTER EXPERIENCE

- Microsoft Word, Excel, Powerpoint, C, C++, Visual Basic, HTML
- Database software: Oracle/SQL, O2/OQL, Oracle Portal
- Familiar with Unix, Linux, and Windows platforms

RELEVANT COURSE WORK

-Introduction to Computer Science, Procedural Design and Programming, Data Structures, Computer Architecture and Assembly Language, Object-Oriented Design and Programming, Operating Systems, Database Management, Advanced Database, Communications & Networks, Analysis of Algorithms, Software Engineering

RELEVANT EXPERIENCE

GTECH Corporation, GScholar/Intern, Summers 2001-2004

- Worked in Northeast Software Support for one summer, and within the Infrastructure group for two summers.
- Researched and implemented various software packages
- Configured network equipment
- Assisted with on-site maintenance (Lincoln Park, Newport Grand)

ADDITIONAL EXPERIENCE & ACTIVITIES

- Concession Worker, Showcase Cinemas**, Spring 2001
- Painter**, Summer 1999, 2000
- Siblings Weekend Committee 2002
- Gaelic Society 2001-Present (Secretary 2002, Vice President 2003, President 2004)
- Intramural Football and Soccer
- Marathon runner

Sara E. Pagliaro

E-mail: Sara.Pagliaro@students.siena.edu

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Waterbury, CT 06708
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Siena College, SPOB 3756
515 Loudon Road
Loudonville, NY 12211
(518) 782-6185

Objective

To obtain a position that will enhance my knowledge of computers and new technologies

Education

Siena College, Loudonville, NY

Graduation Date: 22 May 2005

G.P.A.: 3.68/4.00

Bachelor of Science in Computer Science, Minor in Mathematics

Relevant Coursework

Introduction to Computer Science, Procedural Design & Programming, Data Structures, Assembly Language & Architecture, Object-oriented Design & Programming, Analysis of Algorithms, Database Management Systems, Advanced Database, Independent Study in Java, Independent Study in Digital Image Processing, Software Engineering I, Introductory Electronics, Digital Electronics

Calculus I & II, Foundations of Mathematics I & II, Discrete Mathematics I & II, Linear Algebra

Computer Skills

Known programming languages: C++, Java, Scheme, MIPS Assembly Language
Proficient in Microsoft Office and Internet Explorer

Professional Experience

Polytechnic University, Department of Electrical Engineering, Brooklyn, NY

Research Assistant/Intern

June 2004 – August 2004

- Test and analyze mobile video compression data (part of Polytechnic University's NSF-REU grant)

Siena College, Department of Computer Science, Loudonville, NY

Tutor

September 2003 – present

- Assist students with their understanding of computer programming in C++, Java, and Visual Basic

Siena College, Information & Technology Services (I&TS), Loudonville, NY

Student Consultant

August 2003 – present

- Administer technical support with the general use of Windows XP computers

Seymour Middle School, Seymour Board of Education, Seymour, CT

Substitute Teacher

May 2003 – present

- Instruct secondary education students in a variety of common studies courses, including general computing

DePauw University, Department of Computer Science, Greencastle, IN

Research Assistant/Intern

May 2003 – August 2003

- Aid in developing a functional programming language and environment designed for beginner computer science students (part of DePauw University's NSF-REU grant)

Mad Science of the Capital District, Clifton Park, NY

Program Instructor

March 2002 – present

- Guide elementary school children in their exploration of science

Activities

Executive Assistant, Siena College Student Senate, Siena College, January 2004 – present

Press Secretary, Siena College Student Senate, Siena College, January 2002 – December 2003

Class Representative, Student Affairs Advisory Committee, Siena College, October 2001 – present

John J. Sawicki Jr.

- Objective** I am seeking a responsible and challenging job, with a focus in the web design, hosting, and graphics field.
- Education** 2001 - Current Siena College Loudonville, NY
Computer Science Major, Business Minor
- 1998 - 2001 Columbia High School East Greenbush, NY
Regents Diploma
- Graduated 1 year early
 - Science Sequence
 - Mathematics Sequence
 - Business Sequence
 - Language Sequence - Spanish
- Work experience** 7/2003 – Current New York Independent System Operators Schenectady, NY
Program Analysis and Integration / Display Design (Intern)
- Trouble shooting new programs which will be used in the operation and control of the New York bulk power grid
 - Design/Modify/Recreate displays which will be used in the operation and control of the New York bulk power grid
 - Maintaining multiple servers and pc's with up to date programs and files
 - Three separate internship periods (Summer 03, Winter 03/04, Summer 04)
- 1/2002 – Current Denny's Restaurant East Greenbush, NY
Cook / Server
- Advancements over period of employment
- Summary of qualifications**
- Pertinent Courses:**
- CSIS 110 Introduction to computer science (Language: Scheme)
 - CSIS 120 Procedural design and programming (Language: C++)
 - CSIS 210 Data structures (Language: C++)
 - CSIS 220 Computer architecture and assembly language
(Language: Assembly Language)
 - CSIS 225 Object-Oriented design and programming (Language: C++)
 - CSIS 330 Operating Systems (Language: C)
 - CSIS 365 Communications and Networks
 - CSIS 385 Analysis of Algorithms

- CSIS 400 Bioinformatics (Language: C++)
- CSIS 401 System Administration (Language: C, Perl Script)

References will be furnished upon request