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**Degree Plan Builder**: Requirements Document (version 1.0)

Project: Degree Plan Builder

Date: 03/06/18

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Document status: \_\_ Draft \_x\_ Proposed \_\_ Validated \_\_ Approved

**1. Introduction**

This document contains the user requirements for the *Degree Plan Builder*. These requirements have been derived from the main user: Dr. Aladdin Sleem.

**1.1 Purpose of This Document**

This document is intended to guide development for the Degree Plan Builder. It will go through several stages during the course of the project:

1. **Draft:** The first version, or draft version, is compiled after requirements have been discovered and recorded.
2. **Proposed:** The draft document is then proposed as a potential requirements specification for the project. The proposed document should be reviewed by several parties, who may comment on any requirements and any priorities, either to agree, to disagree, or to identify missing requirements. Readers include clients, end-users, developers, and team members. The document may be amended and re-proposed several times before moving to the next stage.
3. **Validated:** Once the client has agreed to the requirements in the document, it is considered validated.
4. **Approved:** The validated document is accepted by each team member as an appropriate statement of requirements for the project. The developers then use the requirements document as a guide to implementation and to check the progress of the project as it develops.

**1.2 How to Use This Document**

We expect that this document will be used by people with different skill sets. This section explains which parts of this document should be reviewed by various types of readers.

**Types of Reader**

*This document in intended for clients, users, and developers. For clients, the user requirements section is most important. For developers the system requirements section is most important.*

**Technical Background Required**

*A minimal understanding of computers and applications is required to understand this document.*

**Overview Sections**

*For an overall understanding please refer to part 2, the general description section.*

**Reader-Specific Sections**

*For users please refer to part 2, the general description of the document.*

*For a technical description refer to part 3, the specific requirements.*

**1.3 Overview of the Requirements Document**

*1.The user must be able to a) create a new Core Curriculum page or b) view a stored Core Curriculum page.*

*2.The user must be able to create a Degree Plan page which includes the Curriculum Summary and the final Degree Plan.*

**2. General Description**

This section will give the reader an overview of the project.

*The web application will allow users to interact with the university’s core curriculum and create four-year degree(s) from numerous course selections. Users will have the option of creating a new core curriculum for future use or display a current curriculum page that will aid in creating the degree plan(s). The degree plan will only be for undergraduate level years with no inclusion of a minor.*

*The application will allow the user to create a complete Degree plan from various course selections which include TSU courses pertaining to a specific major and core courses that will include their TCCNS equivalent. Users will create a four-year plan with the use of previously selected courses.*

**2.1 Product Perspective**

*This application will serve to quickly create a degree plan by eliminating the need to use Microsoft Excel. The application will save users ample amounts of time by providing a quick method of creating degree plans. The application will also prevent typed errors from a user by providing selection options from a database. This application will be used by* *Dr. Aladdin Sleem and other department officials. The developers of the application include:* *Gustavo Leal, Kayathiry Pragash, Erika Vazquez, and Turki Sultan.*

**2.2 Product Functions**

*The application will focus on user selections from menus, dropdowns, and search options to add or remove classes to the Degree Plan and Core Curriculum.*

**2.3 User Characteristics**

*The application will be primarily used by Dr. Aladdin Sleem and TSU faculty. A user must be able to navigate a web application with dropdown menus, button selections, and save/print options.*

**3. Specific Requirements**

This section of the document lists specific requirements for the *Degree Plan Builder*. Requirements are divided into the following sections:

1. User requirements.
2. System requirements.
3. Interface requirements.

**3.1 User Requirements**

1. *The user must be able to choose between the Core Curriculum or the Degree Plan.*
2. *The application will allow the user to create a Core Curriculum page or a Degree Plan with the use of menus, dropdowns and search options.*
3. *Users must be able to print and save the created pages to their local computers.*
4. *Users must be able to filter through classes by subject.*
5. *Users must be able to select or deselect multiple courses at the same time.*
6. *The application will include buttons that will allow the user to add or remove classes from the pages.*
7. *The application will have an area that will keep track of the total credit hours selected.*

**3.2 System Requirements**

The system requirements describe the flow of the application.

*The application will include a form that will ask users for their name, email, and department name to be stored in a database for future reference.*

***3.2.1 Core Curriculum:***

1. *The user will first select the component area he would like to work with.*
2. *If no previous work was done, then the page will be empty.*
3. *The application will have options to add, delete or submit classes related to the previously selected component area.*
4. *Once the “add” button has been selected: the application will display a menu/list of the courses that can be added.*
5. *The application will allow the client to select the desired classes to be added to the Courses area.*
6. *The application will allow the user to remove previously selected courses by clicking/highlighting the course and pressing the “delete” button.*
7. *The application will allow the user to submit the Core Curriculum page once the page is completed entirely and with no missing fields.*
8. *The total number of required credit hours must be displayed to the user.*

TSU CORE CURRICULUM COURSES

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| COMPONENT AREA | SCH REQUIRED | COURSES | | TCCNS EQUIVALENT |
| Communication | 6 | ENG 131 (3) and ENG 132 (3) | | ENGL 130 1 and ENGL 1302 |
| Mathematics | 3 | MATH 132, MATH 133, MATH 135,  or MATH 136 | | M AT H 1 3 3 2 , M AT H 1 3 1 4 , M AT H 1 3 24 , o r  MATH 2312 respectively |
| Life and Physical Sciences | 6 | One from the following two courses | | : |
| C H E M 131 (3) | | CHEM 1311 |
| B I O L 143 (3) | | BIOL 1308 |
| Plus one from the following courses | | : |
| C H E M 1 3 2 | (3) | CHEM 1312 |
| B I O L 1 3 5 | (3) | BIOL 230 1 |
| G E O L 1 4 1 | (3) | BIOL 130 3 |
| P H YS 1 0 1 | (3) | PHYS 1315 |
| P H YS 2 3 7 | (3) | PHYS 130 1 |
| P H YS 2 3 8 | (3) | PHYS 130 2 |
| P H YS 2 5 1 | (3) | PHYS 2325 |
| Language, Philosophy & Culture | 3 | One from the | following courses: |  |
| E N G 2 3 0 | (3) | ENGL 2332 |
| E N G 2 3 1 | (3) | ENGL 2333 |
| E N G 2 3 5 | (3) | ENGL 2326 |
| E N G 2 4 4 | (3) | ENGL 2326 |
| Creative Arts | 3 | One from the following | courses |  |
| M U S I 1 3 1 | (3) | MUSI 130 1 |
| M U S I 1 3 6 | (3) | MUSI 1306 |
| M U S I 2 3 9 | (3) | HUMA 1315 |
| THEA 130 | (3) | DRAM 1310 |
| AR T 13 5 | (3) | AR T S 130 1 |
| A R T 1 3 7 | (3) | HUMA 2323 |
| American History | 6 | HIS T 231 (3) and HIS T 232 (3) | | HIS T 130 1 and HIS T 130 2 |
| Government/Political Science | 6 | POLSC 235 (3) | | GOVT 2305 |
| POLSC 236 (3) | | GOVT 2306 |
| Social and Behavioral Sciences | 3 | One from the following courses: | |  |
| E C O N 2 3 1 | (3) | EC ON 230 1 |
| EC ON 232 | (3) | EC ON 230 2 |
| SOC 157 | (3) | SOCI 130 1 |
| SOC 158 | (3) | SOCI 1306 |
| SOC 221 | (3) | SOCI 2306 |
| S O C 2 3 8 | (3) | ANTH 2346 |
| G E O G 1 3 2 | (3) | GEOG 130 3 |
| PS Y 131 | (3) | PS YC 230 1 |

|  |  |  |  |
| --- | --- | --- | --- |
| COMPONENT AREA | SCH REQUIRED | COURSES | TCCNS EQUIVALENT |
| Institutional Options | 6 | Two courses from two different categories | |
| African American Studies | |
| HIS T 281 (3), or | HIS T 2381 |
| AR T 13 9 (3), or | HUMA 2319 |
| ENG 2 44 (3), or | ENGL 2326 |
| SOC 254 (3) | SOCI 2319 |
| Communication and Foreign Language: | |
| Speech Communication | |
|  | |
| SC 13 5 (3) or SC 136 (3) | SPCH 1321 or SPCH 1315 |
| Foreign Language | |
|
| C H N S 1 3 1 ( 3 ) , o r | CHIN 1311 |
| F R 1 3 1 ( 3 ) , o r | FREN 1311 |
| SPAN 131 (3) | SPAN 1311 |
| Co m p u t e r S c i e n c e : |  |
| C S 1 1 6 (3), or | CO S C 1 3 0 1 |
| MIS 204 (3) ( School of Business ) , o r | BCIS 1305 |
| AR T 233 (3) ( Visual Arts Major ) , o r | AR T S 2313 |
| EDCI 210 (3) (School of Education) | CO S C 1 3 0 1 |
| Total | 42 |  | |
| - Communication Option: | | Two of the following three categories: | |
| Speech Communication SC 135 (3) or SC 136 (3)    Foreign Language:  C H N S 1 3 1 (3) or higher, or  FR 131 (3) or higher, or  SPAN 131 (3) or higher | |
| SPCH 1321 or SPCH 1315    C H I N 1 3 1 1  F R E N 1 3 1 1  SPAN 1132 | Speech Communication |
| - African American Studies: | | HIST 2381    ENGL 2376 |  |
| * HIS T 281 (3) or * A R T 1 3 9 ( 3 ) o r * E N G 2 4 4 ( 3 ) o r * S O C 2 5 4 ( 3 ) | |

***3.2.2 Curriculum Summary:***

1. *The core curriculum column will be created from a saved table relating to the core curriculum*
2. *For the major column the user will select the desired department.*
3. *The application will display all majors available in the selected department, allowing the user to select one.*
4. *The application will allow the user to select multiple classes within the same menu.*
5. *The application must allow for the addition, deletion and deselection of selected courses.*
6. *The other requirements column will be created with courses from the entire university.*
7. *The application must have an option for elective courses.*

# CURRICULUM SUMMARY FOR THE BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE GENERAL CS CONCENTRATION TOTAL CREDITS REQUIRED: 121

|  |  |  |  |
| --- | --- | --- | --- |
| CORE CURRICULUM (STANDARD)\* | | MAJOR (COMPUTER SCIENCE) | OTHER REQUIREMENTS |
| 42 credits | TCCNS | 51 credits | 28 credits |
| Communication: | | CS 124 (3) | MATH 241 (4) |
| ENG 131 (3) \*\* | ENGL 1301 | CS 140 (3) | MATH 242 (4) |
| ENG 132 (3) | ENGL 1302 | CS 241 (3) | MATH 250 (3) |
| Mathematics: | | CS 243 (3) | MATH 473 (3) |
| MATH 136 (3) | MATH 2312 | CS 246 (3) | PHYS 213 (1) |
| Life and physical sciences: | | CS 248 (3) | PHYS 214 (1) |
| CHEM 131 or BIOL 143 (3) | CHEM 1311or BIOL 1308 | CS 250 (3) | PHYS 238 (3) |
| PHYS 237 (3) | PHYS 1301 | CS 342 (3) | Elective Courses (9) |
| Language, philosophy, and culture: | | CS 343 (3) |  |
| ENG 2xx (3) \*\*\* |  | CS 346 (3) |  |
| Creative arts: |  | CS 415 (3) |  |
| MUSIC 131 or ART 131 (3) | MUSI 1301 or ARTS 1316 | CS 444 (3) |  |
| American history: | | CS 456 (3) |  |
| HIST 231 (3) | HIST 1301 | CS 499 (3) |  |
| HIST 232 (3) | HIST 1302 | CS 3xx or 4xx (3) |  |
| Government/political science: | | CS 4xx or 5xx (3) |  |
| POLS 235 (3) | GOVT 2305 | CS 4xx or 5xx (3) |  |
| POLS 236 (3) | GOVT 2306 |  |  |
| Social and behavioral sciences: | |  |  |
| ECON 231 (3) | ECON 2301 |  |  |
| Institutional Options: | |  |  |
| SC 135 or 136 (3) | SPCH 1321 or SPCH 1315 |  |  |
| CS 120 (3) | COSC 1301 |  |  |

***3.2.3 Degree Plan:***

1. *The application will allow the user to select which semester and year he would like to work on.*
2. *The application will allow the user to select courses from the previously created curriculum summary to be added to the semester/year table.*
3. *The application will remove the option to choose any previously selected classes to prevent errors in duplicating the same class, unless it is first removed from the added field.*
4. *The application will only allow the user to work with one table at a time.*
5. *As the user adds classes a field containing the total credit hours will increment or decrease depending if the user added or removed classes.*
6. *The application will not display the finished Degree Plan until all semesters and years are completed.*

BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE GENERAL CS CONCENTRATION

# DEGREE PLAN TOTAL CREDITS: 121

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| First | | FIRST SEMESTER | |  | | SECOND SEMESTER |  | |
| CS 120 Introduction to Computers and Problem Solving | | 3 | | CS 124 Fund of Machine Comp | 3 | |
| MATH 136 Precalculus | | 3 | | CS 140 Computer Programming in Java | 3 | |
| CHEM 131 or BIOL 143 General Chemistry & Lab  I, Survey of Life Science | | 3 | | MATH 241 Calculus & Analytic Geometry I | 4 | |
| ENG 131 Freshman English I | | 3 | | ENG 132 Freshman English II | 3 | |
| MUSI 131 or ART 131 | | 3 | | SC 135 or 136 Business & Professional Communication or Public Address | 3 | |
| Intro to Music or Drawing and Comp. I | |  | |  |  | |
|  | | 15 hrs | |  | 16 hrs | |
| Second | | THIRD SEMESTER | |  | | FOURTH SEMESTER | |  | |
| CS 241 Object Oriented Using C++ | | 3 | | CS 246 Data & File Structures | | 3 | |
| CS 243 Computer Organization | | 3 | | CS 248 Theory of Computation | | 3 | |
| MATH 242 Calculus & Analytic Geometry. II | | 4 | | CS 250 Computer Networks Fundamentals | | 3 | |
| PHYS 213 College Physics Lab I | | 1 | | MATH 250 Linear Algebra | | 3 | |
| PHYS 237 College Physics I | | 3 | | PHYS 214 College Physics Lab II | | 1 | |
| ENG 2XX Any 200 Level ENG may be selected | | 3 | | PHYS 238 College Physics II | | 3 | |
|  | | 17 hrs | |  | | 16 hrs | |
| Third | | FIFTH SEMESTER | |  | | SIXTH SEMESTER | |  | |
| CS 342 Programming Languages and Design | | 3 | | CS 346 Database Management Systems | | 3 | |
| CS 343 Microprocessors Design | | 3 | | CS 300/400 CS Elective | | 3 | |
| POLS 235 American Political Systems I | | 3 | | POLS 236 American Political Systems II | | 3 | |
| HIST 231 Social & Political History of the United States to 1877 | | 3 | | HIST 232 Social & Political History of the United States since 1877 | | 3 | |
| Elective Course | | 3 | | ECON 231 Principles of Economics I | | 3 | |
|  | | 15 hrs | |  | | 15 hrs | |
| Fourth | | SEVENTH SEMESTER | |  | | EIGHTH SEMESTER | |  | | | |
| CS 444 Operating Systems | | 3 | | CS 456 Software Engineering | | 3 | | | |
| CS 415 Computer Ethics and Society | | 3 | | CS 499 Capstone Project | | 3 | | | |
| CS 400/500 CS Elective | | 3 | | CS 400/500 CS Elective | | 3 | | | |
| MATH 473 Probability and Statistics | | 3 | | Elective Course | | 3 | | | |
| Elective Course | | 3 | |  | |  | | | |
|  | | 15 hrs | |  | | 12 hrs | | | |

**3.3 Interface Requirements**

*The interface will TSU themed which includes color, logos and themes.*

*Buttons for the adding and removing of courses will be incorporated.*

**4. Glossary**

*Abbreviations: The Texas Common Course Numbering System (TCCNS)*