



# Degree Plan Builder

Gustavo Leal  
Turki Alrayes  
Kayathiry Pragash  
Erika Vazquez



# Why is this project being created ?

- Eliminate the use of Microsoft Excel.
- This will save the user great amounts of time.
- The web app will provide users the ability to create a core curriculum , curriculum summary and degree plan.



# Project Background

Divided into three main parts:

- Core Curriculum
- Curriculum Summary
- Degree Plan

**TSU CORE CURRICULUM COURSES**

| COMPONENT AREA                 | SCH<br>REQUIRED | COURSES                                   | TCCNS EQUIVALENT   |
|--------------------------------|-----------------|---|--|
| Communication                  | 6               | ENG 131 (3) and ENG 132 (3)               | ENGL 1301 and ENGL 1302                                    |
| Mathematics                    | 3               | MATH 132, MATH 133, MATH 135, or MATH 136 | MATH 1332, MATH 1314, MATH 1324, or MATH 2312 respectively |
| Life and Physical Sciences     | 6               | One from the following two courses:       |  |
|                                |                 | CHEM 131 (3)                              | CHEM 1311  |
|                                |                 | BIOL 143 (3)                              | BIOL 1308  |
|                                |                 | Plus one from the following courses:      |  |
|                                |                 | CHEM 132 (3)                              | CHEM 1312  |
|                                |                 | BIOL 135 (3)                              | BIOL 2301  |
|                                |                 | GEOL 141 (3)                              | GEOL 1303  |
|                                |                 | PHYS 101 (3)                              | PHYS 1315  |
|                                |                 | PHYS 237 (3)                              | PHYS 1301  |
|                                |                 | PHYS 238 (3)                              | PHYS 1302  |
| Language, Philosophy & Culture | 3               | One from the following courses:           |  |
|                                |                 | ENG 230 (3)                               | ENGL 2332  |
|                                |                 | ENG 231 (3)                               | ENGL 2333  |
|                                |                 | ENG 235 (3)                               | ENGL 2326  |
|                                |                 | ENG 244 (3)                               | ENGL 2326  |
| Creative Arts                  | 3               | One from the following courses:           |  |
|                                |                 | MUSI 131 (3)                              | MUSI 1301  |
|                                |                 | MUSI 136 (3)                              | MUSI 1306  |
|                                |                 | MUSI 239 (3)                              | HUMA 1315  |
|                                |                 | THEA 130 (3)                              | DRAM 1310  |
|                                |                 | ART 135 (3)                               | ARTS 1301  |
|                                |                 | ART 137 (3)                               | HUMA 2323  |
| American History               | 6               | HIST 231 (3) and HIST 232 (3)             | HIST 1301 and HIST 1302                                    |
| Government/Political Science   | 6               | POLSC 235 (3)                             | GOVT 2305  |
|                                |                 | POLSC 236 (3)                             | GOVT 2306  |
| Social and Behavioral Sciences | 3               | One from the following courses:           |  |
|                                |                 | ECON 231 (3)                              | ECON 2301  |
|                                |                 | ECON 232 (3)                              | ECON 2302  |
|                                |                 | SOC 157 (3)                               | SOCI 1301  |
|                                |                 | SOC 158 (3)                               | SOCI 1306  |
|                                |                 | SOC 221 (3)                               | SOCI 2306  |
|                                |                 | SOC 238 (3)                               | ANTH 2346  |
|                                |                 | GEOG 132 (3)                              | GEOG 1303  |
|                                |                 | PSY 131 (3)                               | PSYC 2301  |

Core Curriculum

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

| CORE CURRICULUM<br>(STANDARD)*            |                           | MAJOR<br>(COMPUTER SCIENCE) | OTHER<br>REQUIREMENTS |
|---|---------------------------|-----------------------------|-----------------------|
| 42 credits                                | TCCNS                     | 51 credits                  | 28 credits            |
| <u>Communication:</u>                     |                           | 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)          |
| <u>Mathematics:</u>                       |                           | CS 243 (3)                  | MATH 473 (3)          |
| MATH 136 (3)                              | MATH 2312                 | CS 246 (3)                  | PHYS 213 (1)          |
| <u>Life and physical sciences:</u>        |                           | CS 248 (3)                  | PHYS 214 (1)          |
| CHEM 131 or BIOL 143 (3)                  | CHEM 1311 or<br>BIOL 1308 | CS 250 (3)                  | PHYS 238 (3)          |
| PHYS 237 (3)                              | PHYS 1301                 | CS 342 (3)                  | Elective Courses (9)  |
| <u>Language, philosophy, and culture:</u> |                           | CS 343 (3)                  |                       |
| ENG 2xx (3) ***                           |                           | CS 346 (3)                  |                       |
| <u>Creative arts:</u>                     |                           | CS 416 (3)                  |                       |
| MUSIC 131 or ART 131 (3)                  | MUSI 1301 or<br>ARTS 1316 | CS 444 (3)                  |                       |
| <u>American history:</u>                  |                           | CS 456 (3)                  |                       |
| HIST 231 (3)                              | HIST 1301                 | CS 499 (3)                  |                       |
| HIST 232 (3)                              | HIST 1302                 | CS 3xx or 4xx (3)           |                       |
| <u>Government/political science:</u>      |                           | CS 4xx or 5xx (3)           |                       |
| POLS 235 (3)                              | GOVT 2305                 | CS 4xx or 5xx (3)           |                       |
| POLS 238 (3)                              | GOVT 2306                 |                             |                       |
| <u>Social and behavioral sciences:</u>    |                           |                             |                       |
| ECON 231 (3)                              | ECON 2301                 |                             |                       |
| <u>Institutional Options:</u>             |                           |                             |                       |
| SC 135 or 136 (3)                         | SPCH 1321 or SPCH 1315    |                             |                       |
| CS 120 (3)                                | COSC 1301                 |                             |                       |

\* Students should be advised by a major advisor prior to registering for any credit, particularly any core curriculum credit as listed.

\*\* (N) represents the number of course credits.

\*\*\* ENG 230, ENG 231, ENG 235, or ENG 244 (TCCN: ENGL 2332, ENGL 2333, ENGL 2326, or ENGL 2326)

Curriculum Summary

**BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE  
GENERAL CS CONCENTRATION  
DEGREE PLAN – TOTAL CREDITS: 121**

| First Year  | 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      |
| Second Year | Intro to Music or Drawing and Comp. I                                  |        |   |        |
|             |  | 15 hrs |   | 16 hrs |
|             | 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      |
| Third Year  | 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 |
|             | FIFTH SEMESTER   |        | SIXTH SEMESTER  |        |
|             | CS 342 Programming Languages and Design                                | 3      | CS 346 Database Management Systems                                    | 3      |
| Fourth Year | 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 |
|             | SEVENTH SEMESTER   |        | EIGHTH SEMESTER   |        |
| Fourth Year | 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 |

Four Year Plan



# Process

- Understanding the project
- Gathering user requirements / Asking the user questions
- Development
- Repeat



# Documentation

- Writing the documents.
  - Project Plan
  - Project Schedule
  - User Requirements Document
  - System Design Document

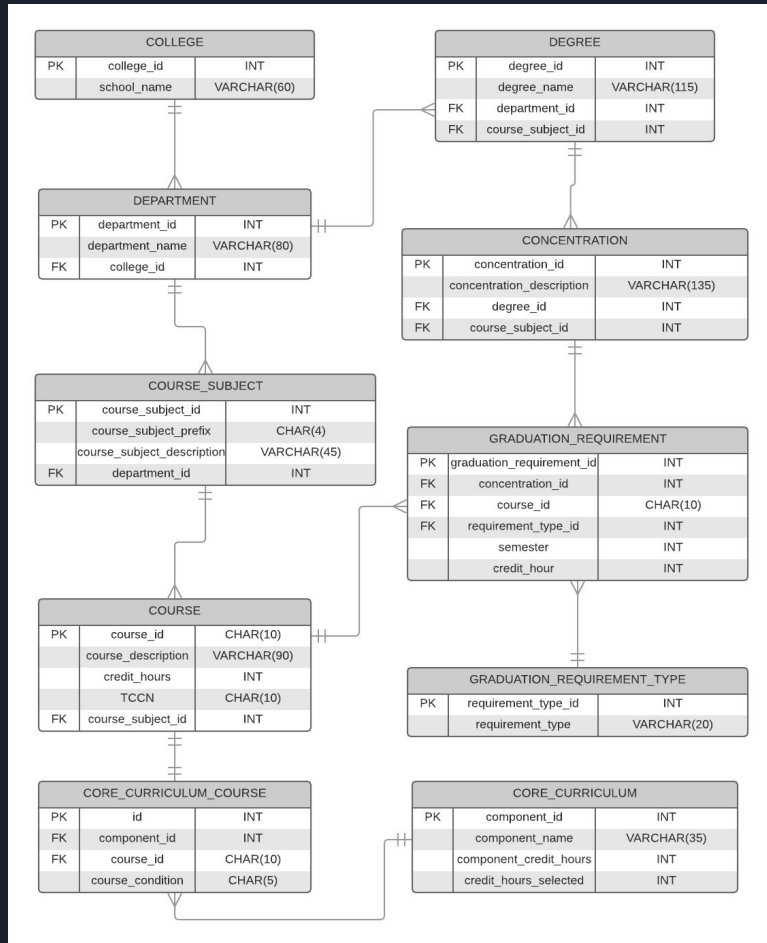
# Development

Development of the database was crucial.

Software:

MySQL RDBMS

Node.js : JavaScript environment that allows execution of JS on the server-side.







# Challenges

- What are the right questions to ask?
- Not knowing the right questions to ask to the user.
- Updating the project as new information is made aware.
- Learning new development tools