

**Bachelor of Science in Computational Sciences
2014 - 2015 Catalog**

The University of Texas at Brownsville and Texas Southmost College

This document provides a list of the UTB/TSC courses required for the major and their equivalent UTRGV courses.
A significant number of courses have changed their course prefix, number, and title.
For any additional information, please visit the Academic Advising Center.

UTB/TSC Courses

Course Equivalents at UTRGV

GENERAL EDUCATION CORE COURSES REQUIRED FOR THE MAJOR

020 – Mathematics (†)

MATH 2413 Calculus I

MATH 2413 Calculus I

030 – Natural Science

PHYS 2325/2125 University Physics I / Lab I

PHYS 2425 Physics for Scientists and Engineers I

PHYS 2326/2126 University Physics II / Lab II

PHYS 2426 Physics for Scientists and Engineers II

090 – Institutionally Designated Option

SPCH 1315 Applied Communication

COMM 1315 Public Speaking

A – GENERAL EDUCATION CORE – 42 HOURS

42 hours of General Education Core

B – MAJOR REQUIREMENTS – 40 HOURS

1 – Computer Science – 28 hours

COSC 1336 Programming Fundamentals I

CSCI 1370 Engineering Computer Science I

COSC 1337 Programming Fundamentals II

CSCI 3326 Object Oriented Programming in JAVA

COSC 2310 Discrete Structures

CSCI 3310 Discrete Data Structures

COSC 2312 Digital Logic

ELEE 2330 Digital Systems Engineering I

COSC 2325 Machine Language and Computer Organization

CSCI 2333 Computer Organization and Assembly Language

COSC 2336 Programming Fundamentals III

CSCI 2380 Computer Science II

COSC 3345 Algorithm Analysis

CSCI 3333 Algorithms and Data Structures

COSC 4313 Computer Networks

CSCI 4345 Computer Networks

COSC 4342 Database Management Systems

CSCI 4333 Database Design and Implementation

COSC 4190 Senior Project

CSCI 4390 Senior Project

2 – Computer Science Electives – 12 hours

(12 hours must be advanced 3000, 4000 level)

12 hours of Computer Sciences (CSCI) Electives

(12 hours must be advanced 3000, 4000 level)

C – ADDITIONAL REQUIREMENTS – 38 HOURS

1 – Mathematics – 8 hours

MATH 2413 Calculus I *

MATH 2413 Calculus I

MATH 2414 Calculus II

MATH 2414 Calculus II

MATH 3381 Statistics

MATH 3331 Applied Statistics I

2 – Concentration – 30 hours

Select one of the following concentrations:

(15 hours must be advanced 3000, 4000 level):

Bioinformatics Computational Mathematics Digital Forensics and Cyber Security

Computational Physics Computational Environmental Science

Computational Chemistry Health Information Systems EC-12 Grade Teaching**

Management Information Systems

TOTAL CREDIT HOURS FOR GRADUATION – 120

TOTAL ADVANCED HOURS (minimum) – 36

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† Grade of "C" or better is required for graduation.

* MATH 2413-3 sch for general education and 1 sch for mathematics requirement.

** These courses are to be counted as a concentration and are only for degree purposes and do not count for certification.