Memorandum of Understanding Regarding Voluntary Course Transfer Agreement Pertaining to Bachelor of Science Degrees in Biology and Chemistry

This voluntary agreement is entered into by and among the signatory institutions of higher education within the State of Texas. Its purpose is to foster enhanced transfer processes for students pursuing a bachelor's degree in various disciplines, and to increase the number and preparedness of students matriculating from two-year preparatory programs at community colleges into bachelor of science (BS) programs at four-year universities. The intention of this transfer compact is not to change the curriculum of a four-year institution. The intention of this compact is to provide guidance to students with respect to what courses offer the best mechanism for obtaining a baccalaureate degree.

This agreement recognizes the following terms and conditions:

1. **Course Offerings:** When offering any or all of the courses specifically listed in Annex A, signatory institutions will offer the course(s) consistent with the indicated course description(s) and student learning outcomes as listed in the Academic Course Guide Manual (ACGM).

2. **Admission:** A student will be admitted into a BS program at a signatory university, or a preparatory program at a signatory community college, if he or she:
   A. satisfies all admission requirements applicable to all students for the institution and BS program selected, including enrollment capacity limitations and cumulative GPA requirements; AND
   B. has earned a grade of at least "C" for all completed courses as shown in Annex B for the program at one or more of the signatory institutions (or has earned a grade higher than "C" for all courses as shown in Annex B for the program if this requirement is applicable to all students).

   Note: Students who do not satisfy these criteria may still be eligible for admission to the institution and program selected, but they should be encouraged to contact an admissions advisor at the institution.

3. **Transfer of Courses:** Students who successfully complete courses shown in Annex A will be able to transfer the course credit hours to a signatory four-year institution upon successful admission to the institution. If the courses completed are part of a degree program to which the student has been admitted, the institution will apply those courses as satisfaction of program requirements, up to the number of credit hours that would be achieved at the four-year institution for a particular course in the degree program. If a course completed is part of a degree program but has fewer credit hours than specified in the program, the institution must determine how to deal with the difference to the overall academic benefit of the student. However, no course with a grade of less than "C" will be transferred or applied to the baccalaureate degree program.

4. **Assessment:** The signatory institutions will assess the effectiveness of this transfer compact on a periodic basis of at least once every three years, including student performance in upper-division courses and the number of students transferring.

5. **Retention of Agreement:** Each signatory institution and the Texas Higher Education Coordinating Board will maintain a copy of this transfer compact.

6. **Advertising:** All signatory institutions will make the broad statewide opportunities afforded under this transfer compact known to the students.

Note: Nothing in this compact is intended to cause an institution to offer a degree program or courses.

I hereby agree that my institution will participate in the following Statewide Transfer Compacts (please select one or more disciplines below by checking the box and initialing to the right):

☐ **Biology** _____ ☐ **Chemistry** _____

_____
Institution Name

_____ _____
President Signature Date

THECB 11/30/2012

ANNEX A

In addition to the Academic Course Guide Manual (ACGM), the course descriptions and student learning outcomes for the courses listed below can be viewed at www.thecb.state.tx.us/Tuning_Engineering_in_Texas (or, if a CD-Rom or flash drive is included with this document, by opening the file "Course Descriptions for Transfer Agreements").

Applicable courses for which revised course descriptions and the addition of student learning outcomes were approved for the Fall 2010 ACGM	Applicable courses for which revised course descriptions and the addition of student learning outcomes were approved for the Fall 2012 ACGM
Calculus I, II, III **General Chemistry I, II** **General Chemistry Laboratory I, II** **University Physics I, II** **University Physics Laboratory I, II**	**Biology for Science Majors I, II** **Biology for Science Majors Laboratory I, II** **General Botany** **General Botany Laboratory** **General Zoology** **General Zoology Laboratory** **Microbiology for Science Majors** **Microbiology for Science Majors Laboratory** **Organic Chemistry I, II** **Organic Chemistry I, II Laboratory** **College Physics I, II** **College Physics I, II Laboratory**

Note:

1. The addition to the ACGM of student learning outcomes for the course University Physics I was approved by the ACGM Committee on March 31, 2010; these outcomes were revised to add the learning outcome "Solve problems involving the First and Second Laws of Thermodynamics" by the ACGM Committee on October 5, 2011.

ANNEX B

The following pages contain a Program of Study for transfer and a Prerequisite Flowchart for each of these science disciplines:

Biology
Chemistry

Community College Program of Study for Transfer to a Biology Program

FRESHMAN YEAR

First Semester (Fall)

		Course	SCH
BIOL	1306 or 1311	Biology for Science Majors I or General Botany[1]	3
BIOL	1106 or 1111	Biology for Science Majors I lab or General Botany lab[1]	1
CHEM	1311	General Chemistry I	3
CHEM	1111	General Chemistry I lab	1
MATH	####	Mathematics Option[2]	3-5
XXXX	####	Texas Core Curriculum Requirement	3
		Semester Credit Hours	**14-16**

Second Semester (Spring)

		Course	SCH
BIOL	1307 or 1313	Biology for Science Majors II or General Zoology[1]	3
BIOL	1107 or 1113	Biology for Science Majors II lab or General Zoology lab[1]	1
CHEM	1312	General Chemistry II	3
CHEM	1112	General Chemistry II lab	1
MATH	####	Mathematics Option[2] or Texas Core Requirement (if math complete)	3
XXXX	####	Texas Core Curriculum Requirement	3
		Semester Credit Hours	**14**

SOPHOMORE YEAR

First Semester (Fall)

		Course	SCH
CHEM	2323	Organic Chemistry I	3
CHEM	2123	Organic Chemistry I lab	1
MATH	####	Mathematics Option[2] or Texas Core Requirement (if math complete)	3
XXXX	####	Texas Core Curriculum Requirement	3
PHYS	1301	College Physics I	3
PHYS	1101	College Physics I lab	1
		Semester Credit Hours	**14**

Second Semester (Spring)

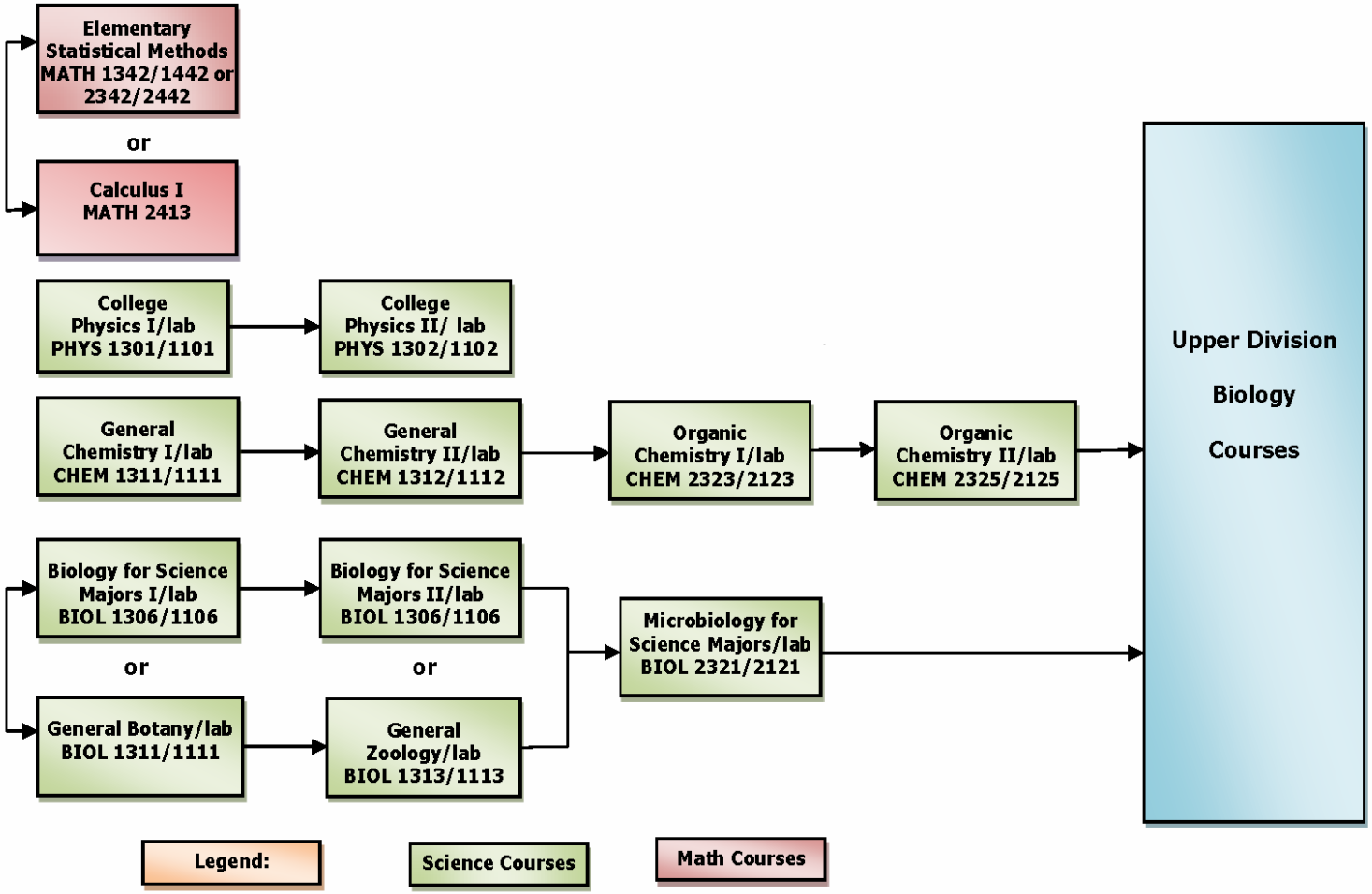
		Course	SCH
BIOL	2321	Microbiology for Science Majors	3
BIOL	2121	Microbiology for Science Majors lab	1
CHEM	2325	Organic Chemistry II	3
CHEM	2125	Organic Chemistry II lab	1
PHYS	1302	College Physics II	3
PHYS	1102	College Physics II lab	1
XXXX	####	Texas Core Curriculum Requirement	3
		Semester Credit Hours	**15**

NOTES:

[1]Students must complete either the BIOL 1306/1106 and 1307/1107 sequence or the BIOL 1311/1111 and 1313/1113 sequences. Courses from these sequences may not be combined.

[2]Begin mathematics coursework according to placement by initial institution. Maintain continuous enrollment until final mathematics level is achieved. Complete through MATH 1342 or 1442 or 2342 or 2442 Elementary Statistical Methods, or MATH 2313 or 2413 or 2513 Calculus I as determined by four-year degree program. The student is advised to check with the school to which he or she intends to transfer for specific requirements and applicability of the mathematics course to the biology major at that institution.

Biology Prerequisite Flowchart



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Community College Program of Study for Transfer to a Chemistry Program

FRESHMAN YEAR

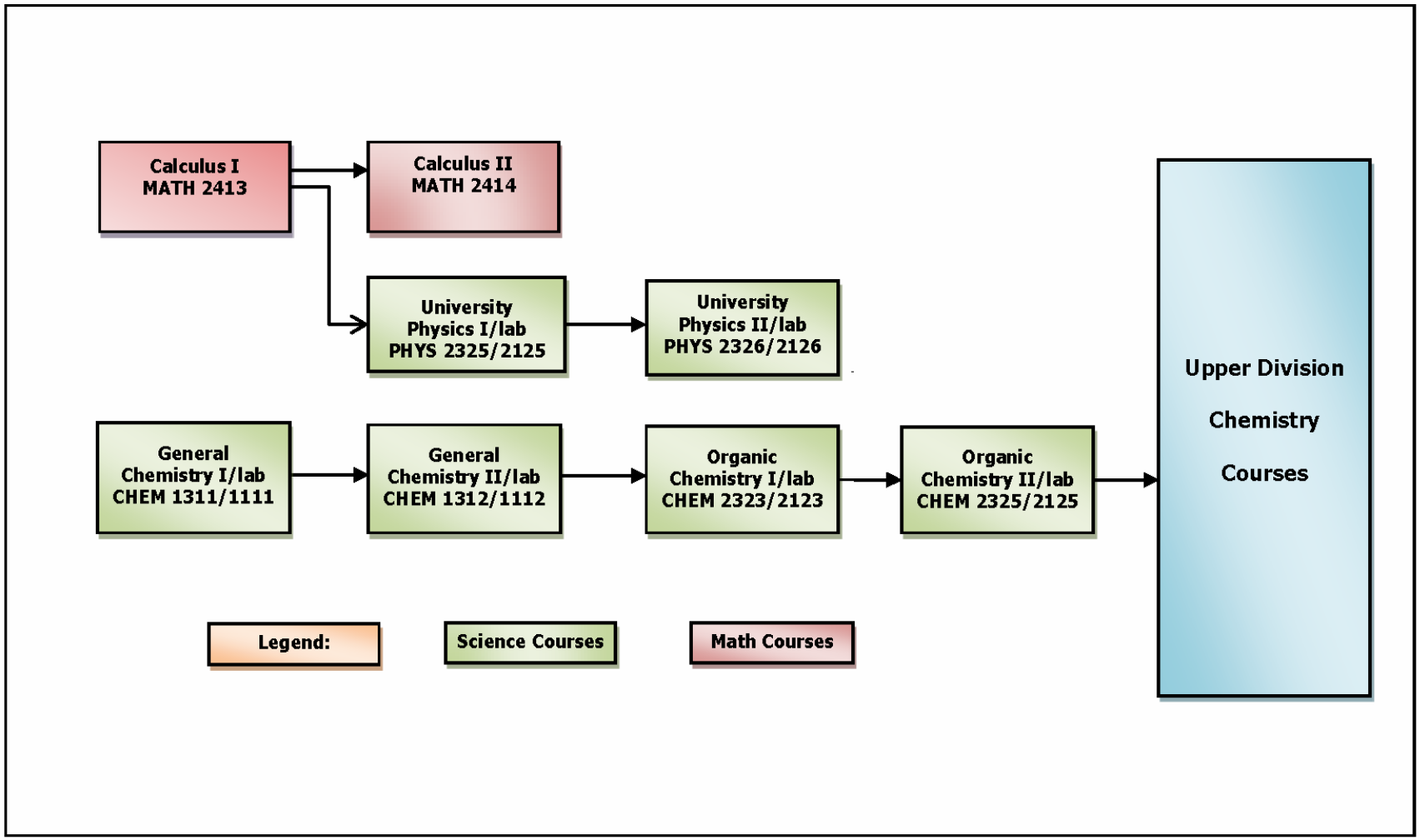
First Semester (Fall)		Second Semester (Spring)	
Course	SCH	Course	SCH
MATH 2413 Calculus I	4	MATH 2414 Calculus II	4
CHEM 1311 General Chemistry I	3	CHEM 1312 General Chemistry II	3
CHEM 1111 General Chemistry I lab	1	CHEM 1112 General Chemistry II lab	1
XXXX #### Texas Core Curriculum Requirement	2	XXXX #### Texas Core Curriculum Requirement	3
XXXX #### Texas Core Curriculum Requirement	3	XXXX #### Texas Core Curriculum Requirement	3
XXXX #### Texas Core Curriculum Requirement	3	XXXX #### Texas Core Curriculum Requirement	3
Semester Credit Hours	16	Semester Credit Hours	17

SOPHOMORE YEAR

First Semester (Fall)		Second Semester (Spring)	
Course	SCH	Course	SCH
CHEM 2323 Organic Chemistry I	3	CHEM 2325 Organic Chemistry II	3
CHEM 2123 Organic Chemistry I lab	1	CHEM 2125 Organic Chemistry II lab	1
PHYS 2325 University Physics I	3	PHYS 2326 University Physics II	3
PHYS 2125 University Physics I lab	1	PHYS 2126 University Physics II lab	1
XXXX #### Texas Core Curriculum Requirement	3	XXXX #### Texas Core Curriculum Requirement	3
XXXX #### Texas Core Curriculum Requirement	3	XXXX #### Texas Core Curriculum Requirement	3
Semester Credit Hours	14	Semester Credit Hours	14

Notes:

1 Texas Common Course Numbers are used for all TCCN-numbered courses.

2 The student is encouraged to check with the institution to which he/she plans to attend for transferability conditions for CHEM 2325/2125 Organic Chemistry II and its accompanying lab.

Chemistry Prerequisite Flowchart