Memorandum of Understanding Regarding Voluntary Course Transfer Agreements Pertaining to Bachelor of Science Degrees in Civil, Electrical, Industrial, Mechanical, Biomedical, and Chemical Engineering; 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 engineering disciplines, and to increase the number and preparedness of students matriculating from a two-year pre-engineering program (PENG) at community colleges into a baccalaureate engineering program (BSENG) 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 PENG courses offer the best mechanism for obtaining a baccalaureate engineering degree.

This agreement recognizes the following terms and conditions:

1. **Course Offerings:** When offering any or all of the mathematics, engineering, and science 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 BSENG program at a signatory university, or a PENG program at a signatory community college, if he or she:
   A. has earned a grade of at least "C" for all completed PENG courses as shown in Annex B for the program at one or more of the signatory institutions; AND
   B. satisfies all admission requirements applicable to all students for the institution and engineering program selected, including enrollment capacity limitations and cumulative GPA requirements.

   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 engineering 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 Engineering Transfer Compacts (please select one or more engineering disciplines below by checking the box and initialing to the right):

☐ **Civil Engr ____** ☐ **Electrical Engr ____** ☐ **Industrial Engr ____** ☐ **Mechanical Engr____**

☐ **Biomedical Engr ____** ☐ **Chemical Engr ____** ☐ **Biology ____** ☐ **Chemistry ____**

_____
Institution Name

_____ _____
President Signature Date

DRAFT

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").

Courses for which revised course descriptions and the addition of student learning outcomes were approved for the Fall 2010 ACGM	Courses for which revised course descriptions and the addition of student learning outcomes were approved for the Fall 2011 ACGM	Courses for which revised course descriptions and the addition of student learning outcomes will be proposed for the Fall 2012 ACGM
• **Calculus I, II, III** • **Differential Equations** • **Dynamics** • **Engineering Graphics I** • **Fundamentals of Circuit Analysis** • **Fundamentals of Circuit Analysis Lab** • **General Chemistry I, II** • **General Chemistry Laboratory I, II** • **Introduction to Engineering** • **Statics** • **University Physics I, II** • **University Physics Laboratory I, II**	• **"C" Programming** • **Discrete Math** • **Electrical Circuits I** • **Electrical Circuits I Lab** • **Engineering Economics** • **Introduction to Digital Systems** • **Introduction to Digital Systems Lab** • **Linear Algebra** • **Plane Surveying**	• **Biology for Science Majors I, II** • **Biology for Science Majors Lab I, II** • **General Botany** • **General Botany Lab** • **General Zoology** • **General Zoology Lab** • **Environmental Biology** • **Environmental Biology Lab** • **Human Physiology for Engineering (New for ACGM)** • **Microbiology for Science Majors** • **Microbiology for Science Majors Lab** • **Organic Chemistry I, II** • **Organic Chemistry Laboratory I, II** • **College Physics I** • **Programming for Engineers** • **Programming Fundamentals** • **Stoichiometry/Mass Balance (New for ACGM)** • **Thermodynamics (New for ACGM)**

Notes:

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.
2. The addition to the ACGM of the courses Electrical Circuits I and Electrical Circuits I Lab, and, in turn, the deletion from the ACGM of the courses Fundamentals of Circuit Analysis and Fundamentals of Circuit Analysis Laboratory was approved by the ACGM Committee on October 5, 2011.

ANNEX B

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

Civil Engineering (10/13/2011)
Electrical Engineering (10/13/2011)
Industrial Engineering (10/13/2011)
Mechanical Engineering (10/13/2011)

Biomedical Engineering (forthcoming)
Chemical Engineering (forthcoming)
Biology (forthcoming)
Chemistry (forthcoming)