

A 3-2 PROGRAM OF COLLEGIATE EDUCATION

in

LIBERAL ARTS AND SCIENCE  
AND ENGINEERING

at

INTER AMERICAN UNIVERSITY OF PUERTO RICO

AND

THE PENNSYLVANIA STATE UNIVERSITY

June 2005

A. INTRODUCTION

The faculties of Inter American University of Puerto Rico and the Colleges of Engineering and Earth and Mineral Sciences of The Pennsylvania State University agree to establish an educational program in liberal arts and sciences and engineering. Three years, or the equivalent, will be spent by a participating student at Inter American University of Puerto Rico, where the student will study liberal arts and science subjects along with pre-engineering courses. Upon satisfactory completion of the first three years, the student will enter the Pennsylvania State University and complete the engineering major degree requirements. A successful completion of these programs will lead to an appropriate baccalaureate degree from each institution. Such a cooperative program is being created in an effort to fulfill the following objectives:

- i. To cooperatively provide a general education in liberal arts and sciences, as well as engineering education for each student enrolled, so that through approximately five years of study, depending on the major and completion of recommended courses, a student may complete what otherwise could require six or more years.
- ii. To provide a student who has not yet decided between engineering and other disciplines, additional time to make that decision while the student studies both arts and sciences during the first three years at Inter American University of Puerto Rico.
- iii. To enable The Pennsylvania State University to attract a more diverse population to its engineering programs.
- iv. To enable qualified students to receive both a liberal and technical education at relatively low cost and, in so doing, provide the Commonwealth and the Nation with more broadly educated engineers.

B. PROCEDURES

Counseling, admission and the transfer of students in this 3-2 cooperative program will be through the application of the following procedures and policies:

*Handwritten initials: "M" and "AM" with a checkmark.*

- 1. Application for admission to the program will be made to Inter American University of Puerto Rico, where the candidate will be subject to the admission requirements of that institution. Only students admitted to Inter American University of Puerto Rico as first-semester (freshmen) students may participate in this 3-2 program. An individual who has been registered as a degree candidate and established a degree candidate record at The Pennsylvania State University prior to entering the 3-2 program at Inter American University of Puerto Rico will be considered a re-enrollment candidate and must meet the criteria for re-enrollment in the major at The Pennsylvania State University.
- 2. A student will indicate the desire to follow the 3-2 program either at the time of the student's admission to Inter American University of Puerto Rico, or early enough in the student's program to permit the student to complete as many of the suggested prerequisite courses, listed in the Appendix of this contract, as possible. Results from aptitude and achievement tests, records of scholastic achievement, and other pertinent information will be exchanged between institutions to aid both in guiding and in counseling students and prospective students. The Pennsylvania State University will provide Inter American University of Puerto Rico with copies of curriculum planning guides used by advisers at Penn State for each major.

Inter American University of Puerto Rico is responsible for informing students in the 3-2 program of the requirements for admission to Penn State, as described in this document and is encouraged to provide each student with a copy of this contract. Students should also be made aware of the courses that are available at Inter American University of Puerto Rico that can be used to meet degree requirements for each of the majors that are part of this agreement. To that end, students should be provided with a copy of the Appendix to this contract.

Students should be advised by Inter American University of Puerto Rico that some government-provided financial aid may not be available for a total of more than four years of study because engineering is considered, by financial-aid regulations, to be a four-year program. Students may, however, be eligible for merit-based scholarships after they complete one year of study at Penn State.

3. Each Fall semester (or term), the 3-2 program coordinator at Inter American University of Puerto Rico shall provide the appropriate Dean's office of The Pennsylvania State University with a list of students at Inter American University of Puerto Rico who have indicated their desire to participate in the 3-2 program. The names of students, their contact information, their intended major, and the year for which they will be seeking admission to Penn State shall be sent to the College of the students' intended major
4. The following engineering majors are available at Penn State to students participating in the 3-2 program. In the College of Engineering, Aerospace Engineering, Agricultural and Biological Engineering, Bioengineering<sup>1</sup>, Chemical Engineering<sup>1</sup>, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Science, Industrial Engineering, Mechanical Engineering, and Nuclear Engineering are available. In the College of Earth and Mineral Sciences, Environmental Systems Engineering, Materials Science and Engineering, Mining Engineering, and Petroleum and Natural Gas Engineering are available.
5. At the end of the first (Fall) semester of the third year, a student becomes a candidate for transfer for any of the available majors if the student has completed the entrance-to-major course requirements<sup>2</sup> and has attained a cumulative grade point average of 3.00<sup>3</sup> (on a 4.00 scale) or greater, with the following exceptions. Majors that are under enrollment control at Penn State will be available to students who have and maintain a cumulative grade point average of 3.50 or higher. In all cases, the cumulative grade point average that will be used to determine eligibility for an engineering major will be calculated by the method used at Penn State. Original grades for courses that were repeated along with grades for the same courses that were repeated will be used in the calculation. Inter American University of Puerto Rico may require higher academic standards for transfer.
6. The student should submit an application (available on the Web) to the Admissions Office of The Pennsylvania State University after the Fall of the student's third year at Inter American University of Puerto Rico. The application should clearly indicate that the student is applying as a 3-2 student. It should be submitted promptly and no later than February 1 of the applicant's third year at Inter American University of Puerto Rico. The completed application should be supported by the following documents:
  - a) Final high school record
  - b) Two copies of the official Inter American University of Puerto Rico transcript, including all grades earned through the Fall Semester or Term of the third year
  - c) Schedule of courses for the Spring of the third year
  - d) Check sheet (see Appendix) of the courses taken and those planned for the Spring of the third year, as they relate to the Penn State courses listed for the requested engineering major. Students must retain a copy of the check sheet for their own records.

The application and supporting documents will be evaluated by the appropriate officer in the Admissions Office and the respective Dean's Office of the College of Engineering or Earth and Mineral Sciences at The Pennsylvania State University. If the applicant meets the entrance requirements, the applicant will be offered provisional admission to The Pennsylvania State University in the 3-2 program, commencing with the following summer session or fall semester.

At the completion of the third year, two copies of the final official transcript of work taken at Inter American University of Puerto Rico should be forwarded to the Admissions Office. The applicant's admission to The Pennsylvania State University will be changed from a provisional basis to a permanent basis if the student has maintained the minimum cumulative grade point average required for the major, is in good standing at Inter American University of Puerto Rico, and has fulfilled all conditions, if any, specified in the student's

<sup>1</sup> It is highly likely that more than two years will be required at PSU to complete the degree requirements for BIOE and CH E because major courses are not offered every semester.

<sup>2</sup> For College of Engineering majors, a minimum grade of 'C' is required in calculus I and II (8 credits), calculus-based physics (4 credits, mechanics), and general chemistry (3 credits).

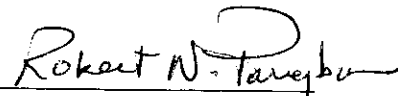
<sup>3</sup> In a few majors, a 2.75 average will be sufficient for entrance. While these may change from year to year, students may enter Agricultural and Biological Engineering (A B E) and the majors in the College of Earth and Mineral Sciences (EMS) with a minimum cumulative grade point average of 2.75.

provisional admission. A minimum of 76 transferable and applicable credits must be completed at Inter American University of Puerto Rico. The student will be placed in the major in which provisional admission was offered, provided all entrance conditions are met. Under normal circumstances, failure to meet the conditions of provisional admission will result in the voiding of the offer of admission for the student and in his or her ineligibility to participate in the 3-2 program.


7. The suggested and available exposure to mathematics, science, engineering science, computer, liberal arts, and communications courses at Inter American University of Puerto Rico is illustrated in the Appendix. The only required courses are those listed in Section B-5. However, it is in the student's best interest to complete as many of the suggested courses for their intended engineering major as possible at Inter American University of Puerto Rico so that they can complete the degree requirements at Penn State in the most timely manner. Course numbers and descriptions may change by the actions of the Inter American University of Puerto Rico faculty or Penn State faculty. In such cases, the Appendix only would need to be amended. Inter American University of Puerto Rico will receive regular updates about changes at Penn State and will be expected to regularly inform Penn State of changes at Inter American University of Puerto Rico, as they relate to the 3-2 program. Students must bring a completed check sheet (see Appendix) with them for their first meeting with their engineering faculty advisor.

The student's preparedness for engineering courses will be assessed by his/her major department and will be based on the courses taken at Inter American University of Puerto Rico, as described on the completed course check list. If the student has not taken all the possible recommended courses at Inter American University of Puerto Rico, it is very likely that more than two years (4 semesters) will be required to complete the Penn State degree requirements. The need to take missing requirements and the effect this may have on the student's graduation date will be determined by the student's major department at Penn State.

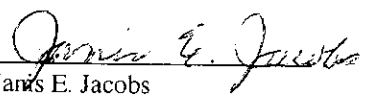
8. As soon as it becomes known, Penn State will notify Inter American University of Puerto Rico of any changes in the majors that are under enrollment control. Normally, decisions about the majors that will be under enrollment control are made about two years before the students for whom the controls would apply are admitted to a major.
9. This agreement shall be reviewed on a 5-year cycle. As part of the review process, special attention will be paid to the total number of students and to the number of women and members of other under-represented groups in engineering that participate in the program from Inter American University of Puerto Rico. A lack of response to requests for information and lack of adequate participation may result in termination of the agreement.

  
 Robert N. Pangborn  
 Associate Dean  
 College of Engineering


8/5/05  
 Date

  
 Robert Crane  
 Associate Dean  
 College of Earth and Mineral Sciences


7/29/05  
 Date

  
 Janis E. Jacobs  
 Vice President and Dean,  
 Undergraduate Education and ~~International Programs~~  
 The Pennsylvania State University

8/10/05  
 Date

  
 Manuel J. Ferns, Esq.  
 President,  
 Inter American University of Puerto Rico

6-14-05  
 Date

  
 Prof. Agnes Mojica  
 Chancellor, San Germán Campus,  
 Inter American University of Puerto Rico

18/6/2005  
 Date

## APPENDIX

Check sheets for core and major specific courses to be taken at  
Inter American University of Puerto Rico  
by students wishing to become eligible for the  
3-2 Engineering Cooperative agreement with  
The Pennsylvania State University

Available at:

<http://www.engr.psu.edu/ProspectiveStudents/Undergraduate/3-2instlist.asp>

Name: \_\_\_\_\_  
Student No.: \_\_\_\_\_

### 3-2 Engineering Program Courses for Core Curriculum

#### 3-2 Institution: Inter American University of Puerto Rico

The Pennsylvania State University

Course	Credits	Course Title	3-2 Course	Credits	Grade
CHEM 12	3	Chemical Principles	CHEM 2115	4	_____
<sup>1</sup> CHEM 14	1	Experimental Chemistry I	Part of CHEM 2115	-----	_____
<sup>2</sup> CMPS 201	3	Computer Programming for Engineers	No Equivalent	-----	_____
<sup>3</sup> E MCH 11	3	Statics	ENGR 3340 + MECH 3120	6	_____
<sup>4</sup> ED&G 100	3	Introduction to Engineering Design and Graphics	ENGR 1100 + ENGR 3120	6	_____
ENGL 15	3	Rhetoric and Composition	ENGL 3007	3	_____
ENGL 202C	3	Effective Writing: Technical Writing	ENGL 3030	3	_____
HL SC	3	Health Education and Exercise and Sport Activities		_____	_____
MATH 140	4	Calculus and Analytic Geometry I	MATH 2251	5	_____
MATH 141	4	Calculus and Analytic Geometry II	MATH 2252	4	_____
<sup>5</sup> MATH 220	2	Matrices	MATH 3350	3	_____
<sup>6</sup> MATH 230	4	Calculus and Vector Analysis	MATH 3250	3	_____
MATH 251	4	Ordinary and Partial Differential Equations	MATH 3400	3	_____
PHYS 211	4	General Physics (Mechanics)	PHYS 3311	4	_____
PHYS 212	4	General Physics (Electricity and Magnetism)	PHYS 3312	4	_____
CAS 100	3	Effective Speech	ENGL 3310	3	_____
Arts Elective	3	Architecture, Art History, Integrative Arts,		3	_____
Arts Elective	3	Landscape Architecture, Music, Theatre Arts		3	_____
<sup>7</sup> Humanities Elective	3	American Studies, Classics, History, Humanities,		3	_____
Humanities Elective	3	Multi-Ethnic Studies, Philosophy, Religious Studies		3	_____
ECON 2 or ECON 4	3	Intro to Microecon. or Macroecon. Analysis and Policy	ECON 1212	3	_____
Social & Behavioral Science Elective	3	Anthropology, Human Development, Political Science, Psychology, Sociology		3	_____

<sup>1</sup>Except AERSP, ME

<sup>2</sup>Except A B E

<sup>3</sup>Except CHE, CMPEN, MATSE (PLMSE)

<sup>4</sup>Except CMPEN, ENVSE, MATSE, PNGE

<sup>5</sup>Except A B E, PNGE

<sup>6</sup>Except ENVSE, MNGE

<sup>7</sup>PNGE and MNGE require an ethics elective

Name: \_\_\_\_\_  
 Student No.: \_\_\_\_\_

**Additional 3-2 Program Courses for Specific Engineering Majors\***  
**3-2 Institution: Inter American University of Puerto Rico**

Major	Course	Credits	Course Title	3-2 Course	Credits	Grade
BIO E, CH E, E SC, M E, ALL EMS except MNG E	CHEM 13	3	Chemical Principles	CHEM 2212	4	_____
BIO E, CH E, E SC, MATSE	CHEM 15	1	Experimental Chemistry	Part of CHEM 2212	-----	_____
BIO E, CH E, MATSE(PLMSE)	CHEM 38	3	Organic Chemistry	CHEM 2221	4	_____
CMPE	CSE 120	3	Intermediate Programming	COMP 2900	3	_____
ALL except CH E, CMPE, E E, and MATSE(PLMSE)	E MCH 12	3	Dynamics	ENGR 3340 + MECH 3120	6	_____
ALL except CH E, CMPE, E E, ENVSE, and MATSE(PLMSE)	E MCH 13	3	Strength of Materials	MECH 3135	3	_____
C E, PNG E	GEOC 1	3	Physical Geology	GEOG 2034	3	_____
ENVSE, MNG E	GEOC 071	3	Physical Geology for Engineers	No Equivalent	-----	_____
ALL except CH E, CMPE, E E, E SC, and MNG E	M E 23/30	3	Introduction to Thermal Science/ Engineering Thermodynamics I	ENGR 3343	4	_____
C E, CMPE, E E, M E	STAT 401/418	3	Experimental Methods/Probability	MATH 3091	3	_____
BIO E, CH E, MATSE(PLMSE)	CHEM 36, 39	2, 3	Organic Chemistry and Lab	CHEM 2222	4	_____
BIO E, CMPE, E E, I E	CSE 271, 275	3, 1	Introduction to Digital Systems & Lab	ELEN 3321	4	_____
BIO E, CMPE, E E, E SC	EE 210	4	Circuits and Devices	ELEN 3301	4	_____
AERSP, E E, E SC, PNG E, MNG E	PHYS 213	2	Fluids & Thermodynamics	No Equivalent	-----	_____
ALL except A B E, C E, I E, ENVSE, PNG E, and MNG E	PHYS 214	2	Waves & Quantum Physics	No Equivalent	-----	_____

\* College of Engineering (ENGR) Majors:

AERSP Aerospace Engineering  
 A B E Agricultural and Biological Engineering  
 BIO E Bioengineering  
 CH E Chemical Engineering  
 CE Civil Engineering  
 CMPE Computer Engineering  
 E E Electrical Engineering  
 E SC Engineering Science  
 I E Industrial Engineering  
 M E Mechanical Engineering  
 NUCE Nuclear Engineering

College of Earth and Mineral Sciences (EMS) Majors:

ENVSE Environmental Systems Engineering  
 MATSE Material Science and Engineering  
 (PLMSE) Polymer Science and Engineering Option of  
 MATSE  
 MNG E Mining Engineering  
 PNGE Petroleum and Natural Gas Engineering