

AN ARTICULATION AGREEMENT FOR A
DUAL DEGREE PROGRAM

in

LIBERAL ARTS AND SCIENCE

and

ENGINEERING

at

Millersville University of Pennsylvania

and

THE PENNSYLVANIA STATE UNIVERSITY

September 2011

A. INTRODUCTION

Millersville University of Pennsylvania and the Colleges of Engineering and Earth and Mineral Sciences of The Pennsylvania State University agree to establish dual degree program (formerly called a 3-2 program) in liberal arts and sciences and engineering. A participating student will spend an equivalent of three years at Millersville University of Pennsylvania for the study of liberal arts and science subjects along with available pre-engineering courses. Upon satisfactory completion of the first three years, the student will enter the Pennsylvania State University and complete remaining prerequisite courses and the engineering major degree requirements. A successful completion of required course work will lead to an appropriate baccalaureate degree from each institution. The dual degree 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 majors and completion of required 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 Millersville University of Pennsylvania.
- 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 and, in so doing, provide the Commonwealth and the Nation with more broadly educated engineers.

B. PROCEDURES

Admission and the transfer of students in this dual degree cooperative program will be through the application of the following procedures and policies:

1. Application for admission to the program will be made to Millersville University of Pennsylvania, where the candidate will be subject to the admission requirements of that institution. Only students admitted to Millersville University of Pennsylvania as first-semester (freshmen) students may participate in this dual degree 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 dual degree program at Millersville University of Pennsylvania will be considered a re-enrollment candidate and must meet the criteria for re-enrollment in the major at The Pennsylvania State University and not as a participant of the dual degree program.
2. A student will indicate the desire to follow the dual degree program either at the time of the student's admission to Millersville University of Pennsylvania, or early enough in the student's program to permit the student to complete as many of the suggested prerequisite and other 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 Millersville University of Pennsylvania with copies of curriculum planning guides, used by advisers at Penn State for each major.

Millersville University of Pennsylvania is responsible for informing students in the dual degree program of the requirements for admission to Penn State, as described in this document and for providing each student with a copy of this contract, including the Appendix. Students should also be made aware of the courses that are available at Millersville University of Pennsylvania that can be used to meet degree requirements for each of the majors that are part of this agreement.

Students should be advised by Millersville University of Pennsylvania 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. With the exception noted, the following engineering majors are generally available in the College of Engineering to students participating in the dual degree program: Aerospace Engineering, Biological Engineering, Bioengineering¹, Chemical Engineering¹, Civil Engineering, Computer Engineering, Electrical

¹ It is highly likely that more than two years will be required at Penn State to complete the degree requirements for BIOE and CH E because major courses begin in the Spring Semester and are not offered every semester.

Engineering, Engineering Science, Industrial Engineering, Mechanical Engineering, and Nuclear Engineering. However, the majors that are under enrollment control at the time of transfer to Penn State are excluded and are not available to students transferring to The Pennsylvania State University under this dual degree agreement. Millersville University of Pennsylvania will be given a 2-year notice of any major that will be coming under enrollment control and the exclusion of that major from the dual degree program. The exclusion will apply to all students from Millersville University of Pennsylvania, even those who had been admitted to Millersville University of Pennsylvania before notification of the exclusion. Penn State will notify Millersville University of Pennsylvania whenever a major will cease to be under enrollment control and become available for the dual degree program.

In the College of Earth and Mineral Sciences, the following engineering majors are available as part of this agreement: Energy Engineering, Environmental Systems Engineering, Materials Science and Engineering, Mining Engineering, and Petroleum and Natural Gas Engineering.

4. 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 requirements² and has attained a cumulative grade point average of 3.00³ (on a 4.00 scale) or greater. 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 plus the grades for the same courses that were repeated will be used in the calculation. Millersville University of Pennsylvania may require higher academic standards for transfer.
5. 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 Millersville University of Pennsylvania. The application should clearly indicate that the student is applying as a dual degree student. It should be submitted promptly and no later than February 1 of the applicant's third year at Millersville University of Pennsylvania. The completed application should be supported by the following documents:
 - a) Final high school record
 - b) Two copies of the official Millersville University of Pennsylvania 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 Spring Semester or Term 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 dual degree 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 Millersville University of Pennsylvania 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 transfer, is in good standing at Millersville University of Pennsylvania, and has fulfilled all conditions, if any, specified in the student's provisional admission. A minimum of 76 transferable and applicable credits must be completed at Millersville University of Pennsylvania. For the purpose of meeting Penn State degree requirements, a block of 76 credits (no more and no less) will be transferred to Penn State.

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 dual degree program.

² 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 plus lab), and general chemistry (3 credits).

³ Students may enter the majors in the College of Earth and Mineral Sciences (EMS) with a minimum cumulative grade point average of 2.75.

6. The suggested and available exposure to mathematics, science, engineering science, computer, liberal arts, and communications courses at Millersville University of Pennsylvania is illustrated in the Appendix. The only required courses for admission to an engineering major are those listed in Section B-4. 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 Millersville University of Pennsylvania 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 Millersville University of Pennsylvania faculty or Penn State faculty. In such cases, the Appendix only would need to be amended. Millersville University of Pennsylvania will receive regular updates about changes at Penn State and will be expected to regularly inform Penn State of changes at Millersville University of Pennsylvania, as they relate to the dual degree 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 Millersville University of Pennsylvania, as described on the completed course check-sheet. If the student has not taken all the possible recommended courses at Millersville University of Pennsylvania, 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.

7. This agreement will expire on April 30, 2014. At that time, a new agreement may be negotiated if both parties express their interest in doing so and the review process yields satisfactory results. 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 Millersville University of Pennsylvania. A new agreement may not be negotiated if there is a lack of response to requests for information and lack of adequate participation in the program.
8. Penn State will honor the terms of this agreement for students who were admitted to Millersville University of Pennsylvania as first semester students for Fall 2013 or earlier. Students who begin at Millersville University of Pennsylvania after Fall 2013 will not be able to participate in the dual degree program unless a new agreement is in place and if so, will be subject to the terms of the new agreement.

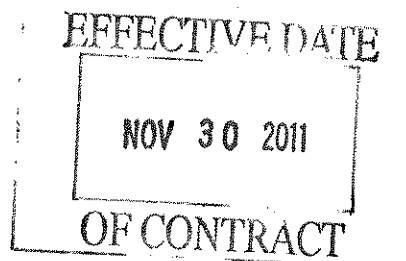
Renata S. Engel 10/26/11
 Renata S. Engel Date
 Associate Dean for Academic Programs,
 College of Engineering,
 The Pennsylvania State University

Vilas A. Prabhu 9/27/11
 Vilas A. Prabhu Date
 Provost and Vice President for
 Academic Affairs
 Millersville University of Pennsylvania

John R. Hellmann 10/27/11
 John R. Hellmann Date
 Associate Dean for Education,
 College of Earth and Mineral Sciences
 The Pennsylvania State University

Jeffrey B. Hawkins 11/30/11
 Jeffrey B. Hawkins Date
 University Legal Counsel,
 Millersville University of Pennsylvania

Robert N. Pangborn 11/2/11
 Robert N. Pangborn Date
 Vice President and Dean for
 Undergraduate Education,
 The Pennsylvania State University



APPENDIX

Check sheets for core and major-specific courses to be taken at
Millersville University of Pennsylvania
by students wishing to become eligible for the
Dual Degree Engineering Cooperative agreement with
The Pennsylvania State University

Available at:

http://www.engr.psu.edu/ProspectiveStudents/Undergraduate/dual_degreeinstlist.asp

Name: _____
 PSU ID: _____

Dual Degree Program Courses for Engineering Majors*

The Pennsylvania State University

Dual Degree Institution: Millersville University of PA

PSU Course	Credits	Course Title	PSU Majors	Dual Degree Inst. Course	Credits	Grade
BIOL 141, 142	3, 1	Physiology and Lab	BIO E, elective for E SC, I E, M E	BIOL 254	4	
CAS 100	3	Effective Speech	ALL	COMM 100	3	
CHEM 110	3	Chemical Principles I	ALL	CHEM 111	4	
CHEM 111	1	Experimental Chemistry I	ALL except AERSP, M E	CHEM 111	4	
CHEM 112	3	Chemical Principles II	BIOE, CH E, elective for E SC, I E, M E, ALL EMS except MNG E	CHEM 112	4	
CHEM 113	1	Experimental Chemistry II	BIOE, CH E, MATSE	CHEM 112	4	
CHEM 210	3	Organic Chemistry I	BIOE, CH E, MATSE(PLMSE), ENENG	CHEM 231	4	
CHEM 212, 213	3, 2	Organic Chemistry II and Lab	BIOE, CH E, MATSE(PLMSE)	CHEM 232	4	
CMPE 270	4	Introduction to Digital Systems & Lab	CMPE, E E, I E	No Equivalent		
CMPS 121, 122	3, 3	Intermediate Programming	CMPE	CSCI 161/162	4/4	
CMPS 200/201	3	Computer Programming for Engineers	ALL except B E, CH E, CMPE	No Equivalent		
E E 210	4	Circuits and Devices	BIOE(EE option), CMPE, E E, E SC	No Equivalent		
E MCH 211	3	Statics	ALL except CH E, CMPE, MATSE (PLMSE), and ENENG	No Equivalent		
E MCH 212	3	Dynamics	ALL except CH E, CMPE, E E, MATSE (PLMSE) and ENENG	No Equivalent		
E MCH 213	3	Strength of Materials	ALL except CH E, CMPE, E E, ENVSE, MATSE (PLMSE) and ENENG	No Equivalent		
ECON 002 or 004	3	Intro. Microecon. or Macroecon. Analysis and Policy (GS)	ALL	ECON 102 or 101	3	
EDSGN 100	3	Introduction to Engineering Design	ALL except CMPE, ENVSE, MATSE, PNG E and ENENG	N/A		
ENGL 015	3	Rhetoric and Composition	ALL	ENGL 110	3	
ENGL 202C	3	Effective Writing: Technical Writing		ENGL 312	3	
GEOSC 001	3	Physical Geology	C E, PNG E, ENVSE, MNG E	ESCI 221	4	

Name: _____

PSU ID: _____

Dual Degree Program Courses for Engineering Majors*

The Pennsylvania State University

Dual Degree Institution: Millersville University of PA

PSU Course	Credits	Course Title	PSU Majors	Dual Degree Inst. Course	Credits	Grade	
MATH 140	4	Calculus and Analytic Geometry I	ALL	MATH 161/163	4/5		
MATH 141	4	Calculus and Analytic Geometry II			MATH 211	4	
MATH 220	2	Matrices	ALL except B E, C H E, P N G E, E N E N G	MATH 322	4		
MATH 230	4	Calculus and Vector Analysis			MATH 311	4	
MATH 251	4	Ordinary and Partial Differential Equations	ALL	MATH 365/467	3/3		
M E 201/300	3	Introduction to Thermal Science/ Engineering Thermodynamics I	ALL except C H E, C M P E N, E E, E S C, M N G E and E N E N G	No Equivalent			
PHYS 211	4	General Physics (Mechanics)	ALL	PHYS 231	5		
PHYS 212	4	General Physics (Electricity and Magnetism)			PHYS 232	5	
PHYS 213	2	Fluids & Thermodynamics	A E R S P, E E, E S C, P N G E, M N G E	PHYS 334	4		
PHYS 214	2	Waves & Quantum Physics			PHYS 233	3	
STAT 401/418	3	Experimental Methods/ Probability	C E, C M P E N, E E	MATH 335	3		
<i>General Education Electives</i>		e.g. Architecture, Art History, Integrative Arts, Landscape Architecture, Music, Theatre Arts	ALL				
Arts Electives (GA)	6						
Health (GHA)	3	Health Education and Exercise and Sport Activities	P N G E, M N G E, and E N E N G require an ethics elective	WELL 175	3		
Humanities Electives (GH)	6	e.g. American Studies, Classics, History, Humanities, Multi-Ethnic Studies, Philosophy, Religious Studies					
Social & Behavioral Science Elective (GS)	3	e.g. Anthropology, Human Development, Political Science, Psychology, Sociology					

* College of Engineering (EN) Majors:

AERSP Aerospace Engineering E E Electrical Engineering
 B E Biological Engineering E S C Engineering Science
 BIOE Bioengineering I E Industrial Engineering
 C H E Chemical Engineering M E Mechanical Engineering
 C E Civil Engineering NUC E Nuclear Engineering
 C M P E N Computer Engineering

*College of Earth and Mineral Sciences (EMS) Majors:

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

Last updated, 9/11

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