

WEST CHESTER UNIVERSITY OF PENNSYLVANIA

and UNIVERSITY OF DELAWARE

PROGRAM ARTICULATION AGREEMENT

THIS AGREEMENT is made this 5th day of October, 2022, by and between West Chester University of Pennsylvania, an educational institution of the State System of Higher Education,

Commonwealth of Pennsylvania and University of Delaware (hereinafter "Agreement"). West Chester University of Pennsylvania and University of Delaware, hereinafter will be collectively referred to as "Institutions." The effective date of the Agreement (hereinafter "Effective Date") shall be the date of the last required signature on the Agreement.

WHEREAS West Chester University of Pennsylvania and University of Delaware are committed to enabling qualified students to receive both a liberal and technical education and, in so doing, provide the Commonwealth of Pennsylvania, the State of Delaware and the Nation with more broadly educated engineers and scientists, and

WHEREAS the two Institutions are committed to providing pathways with a smooth transition for students wishing to earn both baccalaureate and master's degrees, and

WHEREAS the two Institutions better serve the educational growth of students and the economic development of the region through cooperative educational planning and optimal utilization of regional resources, and

WHEREAS the intent of the two institutions is to support the educational progress of qualified students in the Department of Physics at West Chester University of Pennsylvania and to increase regional participation in the Quantum Science and Engineering Program at University of Delaware,

BE IT HEREWITH RESOLVED that this agreement commits the Institutions to establish a connected 3 + 2 degree program (hereinafter "Connected Program") between related academic programs offered by the two Institutions that enables students to earn a bachelor's degree and a master's degree in five years.

PROVISIONS OF THE AGREEMENT

1. This Agreement applies to West Chester University of Pennsylvania Bachelor of Science in Physics degree and University of Delaware Master's in Quantum Science and Engineering (hereinafter "MQSE") degree.

2. The Institutions agree to follow the program curriculum delineated in this document and here to attached as Appendix A, which will allow qualified students to earn a Baccalaureate Physics degree from West Chester University of Pennsylvania and an MQSE degree from University of Delaware.
3. Both educational Institutions will cooperate toward developing, disseminating, and presenting the program information to students.
4. Students will be accepted into the MQSE degree program at University of Delaware under these conditions: completion of all articulated credits (95 credits) at West Chester University of Pennsylvania, as defined by Appendix A; earning a minimum cumulative GPA of 3.2; and providing three letters of recommendation from faculty or scholars. In addition, students who desire to participate in the Connected Program shall complete the Graduate Admissions application for University of Delaware by the completion of the fifth semester of their West Chester University of Pennsylvania Bachelor of Science in Physics program. Upon the sole discretion of the Quantum Science and Engineering program at the University of Delaware, those who fail to meet the stated requirements may still be offered admission based upon other appropriate strengths determined by University of Delaware.
5. University of Delaware articulated course credits outlined in Appendix A must be completed with a grade of "D" or better, with the exception of identified courses in Appendix A that must be completed with a "C" or better in accordance with grading requirements for all students in the West Chester University of Pennsylvania Bachelor of Science in Physics program. University of Delaware thesis, non-thesis, and internship coursework will not satisfy West Chester University of Pennsylvania Bachelor of Science in Physics requirements. West Chester University of Pennsylvania requires 120 credit hours for the Physics degree, and this requirement will be met by the transfer of credit from University of Delaware for successful completion of graduate course work, as outlined in this agreement, bringing the student's total to a minimum of 120 credit hours. Transfer credits will be issued upon receipt of an official transcript from University of Delaware documenting successful completion of the credit hours.
6. Students are subject to all specific policies pertaining to students admitted to the MQSE graduate program at University of Delaware. Matriculated students will be assigned an academic advisor at University of Delaware upon matriculation.
7. Students are subject to all the policies and procedures of both institutions and the specific policies of this Connected Program, including applying for graduation at West Chester University of Pennsylvania. Students must have earned the baccalaureate degree from West Chester University of Pennsylvania prior to applying for graduation at University of Delaware.

8. West Chester University of Pennsylvania will provide degree verification of the baccalaureate degree when the requirements have been met. This verification is required in order for the students to file an Application for Advanced Degree for the MQSE at Delaware. Students will provide, via West Chester University of Pennsylvania, an official transcript to University of Delaware Office of Graduate and Professional Education once the Baccalaureate Physics Degree has been awarded.
9. This Agreement is based on the present curricula contained in this document.
10. The term of this Agreement shall not exceed a period of five years from the Effective date. This Agreement may be terminated by either party for any reason with at least three months' written notice. In such an event, students already accepted into the Connected Program, before the date of termination of the Agreement, will be permitted to progress through the Connected Program.
11. Both institutions reserve the right to modify their individual degree programs as deemed necessary and agree to communicate specific curriculum changes to the department chairs/program directors and/or their designees at either West Chester University of Pennsylvania or University of Delaware.
12. Changes made to the West Chester University of Pennsylvania Physics curriculum articulated in this Agreement will be evaluated by the Quantum Science and Engineering program at University of Delaware to ensure the suitability of any curriculum changes for the Connected Program. Any such changes by West Chester University of Pennsylvania and acceptance of those changes by University of Delaware will be documented in an amendment to this Agreement.
13. Should curriculum changes be made to the MQSE degree program at University of Delaware, the Quantum Science and Engineering program will make a good faith effort to honor the curriculum that was in effect at the time of a student's admission to the Connected Program.
14. FERPA. To facilitate coordinated support for student success, all students will be required to sign a consent to release student data between West Chester University of Pennsylvania and University of Delaware. This consent will authorize the Institutions to share student progress plans and academic records. West Chester University of Pennsylvania and University of Delaware shall agree to keep confidential all personally identifiable student information from education records provided by West Chester University of Pennsylvania as set forth in the Family Educational Rights and Privacy Act (34 CFR § 99.33 (a)(2)) ("FERPA").
15. Neither West Chester University of Pennsylvania nor University of Delaware has any financial responsibilities to this program. Students who apply to this program are

responsible for all tuition, fees, and living expenses that are applicable to their curriculum and enrollment at each respective institution.

16. Financial Aid. During the 4th year of their bachelor's degree program, students seeking financial assistance, may request West Chester University of Pennsylvania to award Federal Aid via the appropriate Free Application for Federal Student Aid (FAFSA) based on enrollment and eligibility at University of Delaware. West Chester University of Pennsylvania will award, authorize, and disburse the student's aid accordingly. It is the student's responsibility to pay University of Delaware. If University of Delaware requires payment before West Chester University of Pennsylvania disburses the aid, the student may need to make payment arrangements with University of Delaware to secure a class schedule.

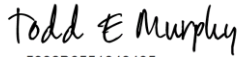
The request for Federal Aid by the student can be submitted using our [Consortium Agreement for Aid Form](#)


17. The parties agree to continue their respective policies of nondiscrimination in regard to sex, age, race, color, creed, and national origin, Title IX of the Education Amendments of 1972 and other applicable laws, as well as the provisions of the Americans with Disabilities Act.
18. The relationship between the parties to this Agreement to each other is that of independent contractors. The relationship of the parties to this contract to each other shall not be construed to constitute a partnership, joint venture or any other relationship, other than that of independent contractors.
19. It is the intent of the Institutions that any dispute arising hereunder shall be resolved by submission to the Presidents of the respective universities
20. This Agreement represents the entire understanding between the parties. This Agreement shall only be modified in writing with the same formality as the original Agreement.
21. Neither of the parties shall assume any liabilities to each other. As to liability to each other or death to persons, or damages to property, the parties do not waive any defense as a result of entering into this contract. This provision shall not be construed to limit West Chester University of Pennsylvania's or Commonwealth's rights, claims, or defenses which arise as a matter of law pursuant to any provisions of this Agreement. Nothing in this Agreement shall be construed to limit the sovereign immunity of the Commonwealth or of the State System of Higher Education or the West Chester University of Pennsylvania.
22. For the purpose of this Agreement, a copy of the Institution's original signature shall be considered to be an original signature; and as such shall be sufficient to bind such parties.

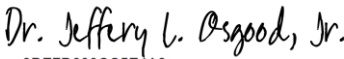
IN WITNESS WHEREOF, the authorized representatives (of the parties have) executed this Agreement as of the date previously indicated.


West Chester University of Pennsylvania


University of Delaware

DocuSigned by:

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10/10/2022
Todd E. Murphy Date
Vice President for Finance and Administration

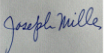

9/30/22
Dr. Matthew Doty Date
Professor and MQSE Program Director
Department of Materials Science and
Engineering

DocuSigned by:

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10/5/2022
Jeffery L. Osgood, Jr., PhD Date
Vice President for Academic Operations


10/14/2022
Dr. Louis Rossi Date
Dean of the Graduate College and
Vice Provost for Graduate and Professional
Education


10/18/22
Dr. Laura Carlson Date
Provost

Approved as to form and legality:

DocuSigned by:

228D708648FD48B...
10/10/2022
University Legal Counsel Date

Appendix A: CONNECTED PROGRAM CURRICULUM

Suggested Course Sequence

**Bachelor's Degree Program: BS
Physics, WCU Master's Degree
Program: MQSE, UD**

*As shown in Table below, students will follow one of two tracks: 1) Quantum Nanotechnology (required courses in black and green), or 2) Quantum Theory (required courses in black and red). Students will indicate the track to which they are applying at the time of application and are welcome to consult with the graduate advisor when making this decision.

West Chester University of PA	C R	University of Delaware	C R
FIRST SEMESTER (Fall)		SEVENTH SEMESTER (Fall)	
MAT 161 Calculus I	4	PHYS 650 Intro. To Quantum Computation and Quantum Information**	3
CHE 103 General Chemistry I	3	QSEG 610 Engineering the Quantum Revolution**	3
CRL 103 Exper. Gen Chem. I	1	MSEG 640 Applied Quantum Mechanics**	3
WRT 120 Effective Writing I	3	QSEG 620 Professional Skills in Quantum Science & Engineering	1
Gen Ed First Year Experience	4		
SECOND SEMESTER (Spring)		EIGHTH SEMESTER (spring)	
MAT 162 Calculus II	4	QSEG 621 Professional Skills in Quantum Science & Engineering	1
CHE 104 General Chemistry II	3	Elective *see list below table	3
CRL 104 Exper. Gen Chem II	1	QSEG 830 Experimental Techniques for Quantum Systems	3
PHY 170 Physics I	4	ELEG 650 Semiconductor Device Design and Fabrication	3
WRT 2xx Effective Writing II	3	QSEG 851 Advanced Topics in Quantum Information	3
BME 120 Intro CAE	3	Elective *see list below table	3
THIRD SEMESTER (Fall)		NINTH SEMESTER (Summer)	
MAT 261 Calculus III	4	{QSEG 869 Thesis Research	4
PHY 180 Physics II	4	{OR	
BME 220 Statics	3	{QSEG 864 Internship	4

Gen Ed. Arts Gen Ed	3		
ECO 111 Princ. Of Economics (Macro)	3		
FOURTH SEMESTER (Spring)		TENTH SEMESTER (Fall)	8
MAT 315 Diff. Eq & Lin. Algebra	3	QSEG 810 Intro. To Quantum Hardware	3
PHY 240 Intro. To Modern Physics	3	Elective*	3
PHY 175 Computational Physics	3	{QSEG 869 Thesis Research	2
Gen Ed- Interdisciplinary	3	{OR	
Gen Ed- Humanities	3	{QSEG 868 Non-Thesis Research	2
Gen Ed- Science	3		
FIFTH SEMESTER (Fall)			
PHY 300 Classical Mechanics	3		
PHY 310 Intermediate Physics Lab	3		
PHY 370 Math Physics	3		
PHY 420 Quantum Mechanics I	3		
SIXTH SEMESTER (Spring)			
PHY 455 Advanced Physics Lab	3		
PHY 330 Electronics	3		
PHY 480 Special Topics (or PHY350 Thermodynamics)	3		
Gen Ed- PHI 180 Intro to Ethics	3		
Elective Course (Diverse Communities requirement)	3		
Credit Total	95	Credit Total	32

*Suggested Elective choices for Nanotechnology Track and Quantum Theory Track:

MSEG 841 Solid State Materials

PHYS624 Introduction to Condensed Matter Physics

ELEG682 Optics and Photonics

** These courses will satisfy WCU's 9 credits of upper division Physics courses and must be completed with a grade of "C" or better.

***University of Delaware thesis, non-thesis, and internship coursework (i.e. QSEG 864, 868, 869), will not satisfy West Chester University of Pennsylvania requirements for the Bachelor of Science in Physics.