DREXEL UNIVERSITY
School of
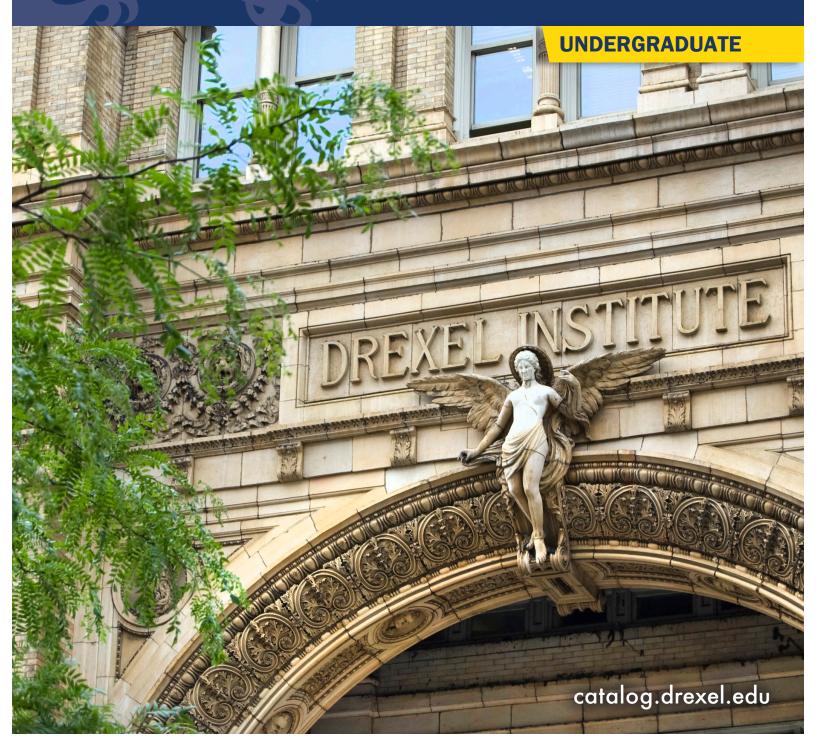Education

CATALOG
2021-2022

DREXEL INSTITUTE

catalog.drexel.edu

The School of Education

The School of Education offers Pennsylvania Department of Education-approved programs to certify students who want to become teachers. Undergraduate students have the option to choose from a variety of traditional full-time and non-traditional part-time on-campus and online programs. These programs are designed to meet the needs of a variety of diverse learners who wish to pursue a bachelor's degree and Pennsylvania State Certification in elementary (grades Prek-4), middle level (grades 4-8) and/or secondary (grades 7-12).

School of Education undergraduate students have the option to choose from the following program options: BS on-campus (full- or part-time) taking day or evening courses, or the part-time Online BS Degree completion program. In addition, any Drexel non-education undergraduate student who is interested in becoming a teacher has the option to enroll in either the BS/MS or BA/MS Dual Degree programs regardless of their major.

The School of Education (http://www.drexel.edu/soe/) seeks to enrich knowledge and practice related to lifespan learning, based on the most current and appropriate research and practice. Our goal is to improve human understanding through programs and activities that emphasize creative uses of human effort, technology, leadership, and problem solving.

Majors

- Design of Learning Technologies (BS) (p. 4)
- Elementary Education (BS) (p. 8)
  - PK-4 (p. 11)
  - PK-4 and Special Education (p. 17)
  - Middle Level Math and English (p. 21)
  - Middle Level Science and Math (p. 31)
  - Middle Level Science and English (p. 26)
- Education: Non-Certification (BS) (p. 35)
- *NEW:* Special Education PK-12 (BS)
- Teacher Education (BS) (p. 43)
  - Biology (p. 46)
  - Chemistry (p. 51)
  - *NEW:* Computer Science
  - Earth and Space Science (p. 60)
  - English (p. 66)
  - General Science (p. 71)
  - Mathematics (p. 75)
  - Physics (p. 80)
  - Social Studies (p. 84)

Accelerated Degrees

- *NEW:* Elementary Education PK4 (BS) / Creativity and Innovation (MS)
- Elementary Education PK4 (BS) / Teaching Learning, and Curriculum (Advanced Track) MS (p. 93)
- *NEW:* Elementary Education (PK4 and Special Education) BS / Teaching, Learning and Curriculum (Advanced Track) MS
- *NEW:* Teacher Education BS - English / Teaching, Learning, and Curriculum (Advanced Track) MS

- *NEW:* Teacher Education BS - Secondary Mathematics / Teaching, Learning and Curriculum (Advanced Track) MS
- *NEW:* Teacher Education BS - Secondary Social Studies / Teaching, Learning, and Curriculum (Advanced Track) MS

Minors

- Design of Learning Technologies (p. 120)
- *NEW:* DragonsTeach Certification Minor
- *NEW:* DragonsTeach Math Certification Minor
- *NEW:* DragonsTeach Middle Years Minor
- *NEW:* DragonsTeach Middle Years Certification Minor
- Education (p. 123)
- Sport Coaching Leadership (p. 123)
- STEM Education (p. 124)

Certificates

- Creativity and Innovation (p. 125)

About the Curriculum

The School of Education's programs apply the most updated trends in theory, instruction, and leadership, with an emphasis on effective teaching integrating the sciences, enhancing teaching by using technology, two central components of every Drexel Education. In addition, this is the only such program in the country to incorporate a six-month paid internship in industry related to the student's area of certification or individual interest.

Certification for classroom instruction is organized according to the two majors, the BS in Elementary Education and the BS in Secondary Education. Below is a list of all certification areas currently offered by the School of Education.

- Elementary education
  - Elementary: PK-4
  - Elementary: PK-4 and Special Education
  - Middle Level Math and English
  - Middle Level Science and English
  - Middle Level Science and Math
- Secondary education (grades 7-12)
  - Biology
  - Chemistry
  - Computer Science
  - Earth and Space Science
  - English
  - General Science
  - Mathematics
  - Physics
  - Social Studies

Students may acquire certification in more than one subject area.

The School of Education uses university-wide resources to prepare fully qualified teachers at both the elementary and secondary levels. The Teacher Education Program at Drexel University is closely aligned with National INTASC Teaching Standards as well as the Pennsylvania Department of Education's Four Domains for Professional Teaching. In addition, the Teacher Ed Program has identified seven *Program Outcomes*, which identify the specific qualities that set the Drexel

Teacher Candidate apart from other candidates in the field. These program outcomes are directly aligned with the Drexel University Student Learning Priorities (DSLP). It is expected that students exiting the Teacher Education Program at Drexel University will exhibit these seven standards in his/her professional teaching practice.

Program Outcomes:

1. The teacher candidate demonstrates independent and creative academic leadership skills that can be applied in the classroom, school community and the profession.

2. The teacher candidate understands the changing role of the educator in an increasingly diverse society, and applies this understanding in the classroom, school community and profession.

3. The teacher candidate holds a global perspective on current issues in education, understands best pedagogical practices, and utilizes this knowledge in the classroom, school community and profession.

4. The teacher candidate recognizes the importance of the application of educational research as a tool to explore critical aspects of teaching and learning in PK-12 setting.

5. The teacher candidate demonstrates a strong academic background in all subject areas that meet PDE content requirements, with strong emphasis on mathematics and science.

6. The teacher candidate can effectively integrate tools of technology in curriculum, assessment and instruction to enhance PK-12 student learning.

7. The teacher candidate demonstrates the ability to reflect upon one's professional practice through the successful completion of course work and engagement in experiential learning to promote positive, transformative change within the profession.

Pennsylvania Instructional I Teaching Certifications

There are multiple ways for Drexel University students to obtain their initial and add-on teaching certifications in Pennsylvania while pursuing their current major at Drexel. Education majors have the opportunity to achieve these certifications through the Bachelors of Science Education program, the BS/MS dual degree, the graduate level Post-baccalaureate (PBC) and Masters (MS) in Teaching Learning and Curriculum programs.

Non-teaching education majors may have the opportunity to build teacher certification into their program of study as electives, depending on their major. Those students who cannot manage the whole certification program may opt to participate in the education non-certification concentration. Undergraduate students also have the option to enroll in as many content courses as can be managed in their undergraduate degree and then finish their teaching certification requirements through the Post-baccalaureate Teaching Certification or Masters in Teaching Learning and Curriculum programs. Additionally, undergraduate non-education majors can pursue a Master's degree in Teaching, Learning, and Curriculum with Teaching Certification through the BA/MS or BS/MS dual degree route while in their current major provided they meet and maintain the program's minimum criteria of a 3.0 cumulative GPA requirement and have completed no more than 90-120 credits at Drexel at the time of applying for the dual degree program.

*Please note that during a Drexel student's senior year, undergraduate students have the option to take up to and including 9 graduate credits in core pedagogy education courses that can be applied to a future graduate level Post-baccalaureate Teacher Certification or MS degree program at Drexel provided that these graduate credits are not required for UG degree completion and the student received a minimum grade of a "B" in those graduate courses.

Please be advised that the Pennsylvania Department of Education requires that all teacher certification candidates must maintain a 3.0 GPA in their degree or certification program in order to be recommended for state certification.

Combination certifications are available from the School of Education. Sample combinations include:

- Grades PreK-4 certification, with certification in Special Education.
- Biology certification, with courses for additional certification in chemistry.
- Chemistry certification, with courses for additional certification in biology.
- Earth and space science certification, with courses for additional certification in chemistry.
- Earth and space science certification, with courses for additional certification in physics.
- Mathematics certification, with courses for additional certification in physics.
- Physics certification, with courses for additional certification in mathematics.

Students pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study.
For more information, please contact the Program Manager or the School of Education at 215.895.6770.

Post-Graduate Opportunities

Students obtain employment in the School District of Philadelphia and neighboring school districts in Pennsylvania and such surrounding states as New Jersey, Delaware, Ohio, and New York. Often, students begin a graduate degree program in combination with their employment.

Writing-Intensive Course Requirements

In order to graduate, all students must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center web page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Cooperative Education

Drexel students are well prepared for success in their career thanks in part to high-quality experiential learning like the cooperative learning experiences. Drexel's School of Education Cooperative Education

program is well known for its outstanding field-based experiences that include a range of formal, school based and community activities. These experiences give students invaluable first-hand exposure to the classroom and the opportunity to apply what they have learned towards student teaching experiences. The cooperative learning experience offered as part of the professional career development support services at Drexel University pertains to full-time undergraduate students pursing teacher certification. Non-certification concentration students perform a Cooperative learning experience outside of the standard school-based classroom environment. Part-time students do not participate in cooperative learning experiences.

The on-campus BS degree is completed in four years. In addition to the Pennsylvania Department of Education's (PDE) state mandated field experiences and 2 quarter term student teaching residency, this program includes one six-month internship period of full-time employment related to the student's initial area of teacher certification. The goal of the co-op program in teacher education is to provide real-world experiences for future teachers to use in their classrooms.

Students typically participate in co-ops during their fall and winter terms of their sophomore year and pursue varied positions geared directly to their area(s) of certification. Candidates are asked to pursue a position that would allow them to see other areas of education that reach beyond K-12 teaching. This caveat to the requirement allows candidates to understand the broadness and extensive nature of the field of education both nationally and internationally.

Design of Learning Technologies

Major: Design of Learning Technologies
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 182.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.0607
Standard Occupational Classification (SOC) code: 25-9099

About the Program

Note: Effective Fall 2021, students are no longer being accepted into the BS in Design of Learning Technologies program.

The Bachelor of Science in Design of Learning Technologies (DLT) prepares students to build the next generation of information and computing technology for learning. Students learn interdisciplinary skills and knowledge necessary to design, develop, and implement technology-enhanced learning environments for a variety of settings.

Students in the major will be exposed to three major themes in their coursework:

- **Cognition and Learning**: Cognitive/mental processes and representations underlying knowledge and skill acquisition
- **Culture and Society:** Social, cultural, and organizational aspects of teaching and learning, in and outside of schools
- **Design and Technology:** Design and evaluation techniques to enable the development of new and emerging technologies to support learning and teaching

Work across these themes is coordinated to facilitate the development of expertise on the design of learning technologies grounded in strong theories of learning for a wide range of educational contexts (e.g., classrooms, museum exhibits, after-school, summer camps, etc.), audiences (e.g., teachers, students, corporations, children, adults, etc.), and learning environments.

The curriculum combines knowledge of how people learn, learning technology design, and child/adolescent development from the School of Education with design courses in the Westphal College of Media Arts & Design and computational thinking courses in the College of Computing and Informatics. Co-op experiences may include work at software and design companies, non-profits, cultural institutions, or research environments where there are needs for individuals with training in both learning theories and computational design.

Graduates of the program will have strong skills in applying theory to the creation of educational and learning environments. With hands-on courses focused on human learning and technology design, the Design of Learning Technologies major combines expertise in the foundations of education with design and technical expertise that is central for best practices of the application, development, and use of technologies throughout our lifetimes.

Degree Requirements

General Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
BIO 100	Applied Cells, Genetics & Physiology	3.0
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
CHEM 111	General Chemistry I	4.0
COM 111	Principles of Communication	3.0
CRTV 301	Foundations in Creativity	3.0
CRTV 303	Creativity in the Workplace	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
Literature Requirement (Select one from ENGL 200 - ENGL 335)		3.0
HIST 201	United States History to 1815	4.0
or HIST 202	United States History, 1815-1900	
or HIST 203	United States History since 1900	
INFO 105	Introduction to Informatics	3.0
MATH 101	Introduction to Analysis I	4.0
MATH 102	Introduction to Analysis II	4.0
MUSC 130	Introduction to Music	3.0

PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
Education Requirements		
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDLT 103	Foundation in Education III: Learning Sciences	3.0
EDUC 105	Freshman Pedagogy Seminar *	3.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 123	Adolescent Development	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 335	Engaging the Learner	3.0
Design of Learning Technologies Program Requirements		
ANTH 370	Ethnographic Methods	3.0
EDLT 101	Learning, Culture & Technology Workshop I	3.0
EDLT 201	Learning, Culture and Technology Workshop II	3.0
EDLT 238	New Media Literacies	3.0
EDLT 250	Sociocultural Perspectives on Learning	3.0
EDLT 301	Learning, Culture & Technology Workshop III	3.0
EDLT 339	Future Pedagogies	3.0
EDLT 353	Play and Learning in Participatory Cultures	3.0
EDLT 354	Learning In and Out of Schools	3.0
EDLT 491	Senior Project I	3.0
EDLT 492	Senior Project II	3.0
EDLT 493	Senior Project III	3.0
EHRD 205	Organizational Learning & Strategy	3.0
INFO 103	Introduction to Data Science	3.0
INFO 110	Introduction to Human-Computer Interaction	3.0
WEST T480	Special Topics in WEST Studies	3.0
Free Electives **		**36.0**
Other University Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
UNIV T101	The Drexel Experience	1.0
Total Credits		**182.0**

*   Students enroll in EDUC 105 three times; Fall, Winter and Spring of Freshman Year.

**   Students are encouraged to work with their advisor to select electives or a minor.

Sample Plan of Study

4-Year Spring Summer Coop Cycle*

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDLT 101	3.0	CIVC 101	1.0	COM 111	3.0	VACATION	
ENGL 101 or 111	3.0	EDUC 105	1.0	EDLT 103	3.0		
EDUC 101	3.0	ENGL 102 or 112	3.0	EDUC 105	1.0		
EDUC 105	1.0	MATH 101	4.0	ENGL 103 or 113	3.0		
EDUC 120	3.0	Free elective	6.0	INFO 110	3.0		
UNIV T101	1.0			MATH 102	4.0		
	14		**15**		**17**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDLT 201	3.0	CRTV 301	3.0	ANTH 101	3.0	BIO 101	3.0
INFO 105	3.0	ECON 201	4.0	BIO 100	3.0	EDLT 353	3.0
PSY 101	3.0	EDLT 238	3.0	COOP 101 **	1.0	ENGL 200 - ENGL 335	3.0
PHYS 151	3.0	EHRD 205	3.0	EDLT 339	3.0	Free electives	6.0
Free Elective	3.0			EDUC 123	3.0		

		SOC 335	3.0	
15	**13**	**16**		**15**

Third Year

Fall	Credits Winter	Credits Spring	Credits Summer	Credits
CRTV 303	3.0 EDLT 250	3.0 COOP EXPERIENCE	COOP EXPERIENCE	
EDLT 301	3.0 EDUC 324	3.0		
EDLT 354	3.0 EDUC 335	3.0		
HIST 201, 202, or 203	4.0 Free electives	6.0		
Free elective	3.0			
16	**15**	**0**		**0**

Fourth Year

Fall	Credits Winter	Credits Spring	Credits
CHEM 111	4.0 ANTH 370	3.0 EDLT 493	3.0
EDLT 491	3.0 EDLT 492	3.0 MUSC 130	3.0
INFO 103	3.0 EDUC 316	3.0 Free electives	9.0
PSY 330	3.0 EDUC 322	3.0	
WEST T480	3.0 Free elective	3.0	
16	**15**	**15**	

Total Credits 182

*   Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer only) based on their co-op program (5-year or 4-year) and major.

**   COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University).* Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University).* Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University).* Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh).* Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University).* Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison).* Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College).* Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University).* Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University).* Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University).* Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University).* Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University).* Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland).* Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University).* Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 180.0 - 188.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1202; 13.1311; 13.1316
Standard Occupational Classification (SOC) code: 25-2022

About the Program

Elementary school teachers instruct classes of children in several subjects. Often they work as part of a team with other teachers who are jointly responsible for a group of students in at least one subject.

The BS in Elementary Education uses University-wide resources to prepare fully qualified teacher candidates at the early and elementary education levels. On-campus candidates in the School of Education participate in one six-month cooperative education (co-op) experience in a professional position related to their area of certification.

Primary teacher certification options include:

- Pre-Kindergarten - Grade 4 (p. 11)
- Pre-Kindergarten - Grade 4 & Special Education (p. 17)
- Middle Level (grades 4-8) Mathematics and English (p. 21)
- Middle Level (grades 4-8) Science and English (p. 26)
- Middle Level (grades 4-8) Science and Mathematics (p. 31)

Candidates may acquire certification in more than one subject area.

Elementary Education, Pre-Kindergarten through Grade 4: Candidates are certified to teach in pre-kindergarten through 4th grade. The competencies for this concentration include child development (birth through age 5), language development, early literacy and math foundations for preschool years, early intervention, integrating the arts for the developing child and family, and community partnerships.

Elementary Education, Pre-Kindergarten through Grade 4 and Special Education: Focused study to work with children in pre-kindergarten, kindergarten, and grades 1-4 across subject areas (ages 3-9) within the competencies listed previously. The special education PK-12 certification dual program also seeks to produce professionals who are equipped with the fundamental skills, knowledge, and competencies necessary to meet the needs of the students at risk for school failure and students with disabilities in multiple settings. This certificate program focuses on students at the pre-kindergarten through secondary level. The Special Education PK-12 certification program is intended for those interested in gaining greater skills and expertise in the area of special education and a teaching certificate in the area of PK-12 special education.

Elementary Education, Middle Level: Focused study to work with students in grades 4-6 across subjects and with students in grades 7-8 in two core academic subject(s) the teacher education candidate chooses to pursue:

- Middle School Mathematics and English
- Middle School Science and English
- Middle School Science and Math

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach and Dragons Teach Middle Years pathways. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

More information is available at the School of Education's (http://www.drexel.edu/soe/) website.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: PK-4

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter

Total Credit Hours: 180.0
Co-op Options: One Co-op (Four years)
Classification of Instructional (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

This certification option within the BS in Elementary Education (p. 8) enables teachers to work with children in prekindergarten, kindergarten, and grades 1 through 4 (ages 3-9) across subject areas. Required competencies are covered in areas such as child development, language development, early literacy and math foundations for preschool years, early intervention, integrating the arts for the developing child, and family and community partnerships.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement [*]	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience [*]	1.0
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
Free electives		10.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0

EDUC 210	Early Language Development	3.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**180.0**

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	BIO 100 or 161	3.0	EDEX 142	3.0	VACATION	
EDUC 106	1.0	CIVC 101*	1.0	EDUC 108	1.0		
EDUC 120	3.0	COM 111	3.0	ENGL 103 or 113	3.0		
ENGL 101 or 111	3.0	EDUC 107	1.0	MATH 173 or 107	3.0		
MATH 171	3.0	EDUC 121	3.0	MUSC 130	3.0		
UNIV T101	1.0	ENGL 102 or 112	3.0	PSY 101	3.0		
		MATH 172	3.0				
	14		**17**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111	4.0	BIO 101 or 161	3.0	EDUC 236	3.0	EDUC 210	3.0
EDEX 344	3.0	COOP 101*	1.0	EDUC 326	3.0	EDUC 306	3.0
EDUC 205	1.0	EDEX 368	3.0	EDUC 365	3.0	EDUC 312	3.0
EDUC 308	3.0	EDUC 216	3.0	NFS 100	2.0	EDUC 335	3.0
PSY 330	3.0	EDUC 314	3.0	NFS 101	1.0	HIST 275	3.0
		EDUC 316	3.0	PSY 320	3.0		
	14		**16**		**15**		**15**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		ECON 201	4.0	EDLT 325	3.0
MTED 417		EDUC 336	3.0	EDUC 305	1.0	EDUC 324	3.0
				ESTM 342	3.0	EDUC 338	3.0
				PHYS 151	3.0	EDUC 355	3.0
				English (Literature) Elective: ENGL 200 - ENGL 360	3.0	MTED 418	3.0
	3		**3**		**14**		**15**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 405	1.0	EDUC 410	9.0	ENVS 260	3.0
EDUC 409	9.0	SOC 335	3.0	Free electives	10.0
EDUC 411	3.0				
	13		**12**		**13**

Total Credits 180

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

Transfer Student Part-time Plan of Study*

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	EDUC 107	1.0	EDEX 142	3.0	EDUC 210	3.0
EDUC 106	1.0	EDUC 120	3.0	EDUC 108	3.0	EDUC 216	3.0
ENGL 101 or 111	3.0	ENGL 102 or 112	3.0	EDUC 121	3.0	ENGL 103 or 113	3.0
Free Elective	3.0	MATH 171	3.0	MATH 172	3.0	HIST 275	3.0
	10		**10**		**10**		**12**

Second Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.0	BIO 162	3.0	EDUC 236	3.0	EDUC 306	3.0
EDEX 344	3.0	EDEX 368	3.0	EDUC 305	1.0	EDUC 312	3.0
EDUC 205	1.0	MUSC 130	3.0	EDUC 365	3.0	EDUC 335	3.0
MATH 173	3.0			ENGL 200-360 Literature Elective	3.0		
	10		**9**		**10**		**9**

Third Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 324	3.0	EDUC 316	3.0	COM 111	3.0	EDLT 325	3.0
EDUC 326	3.0	ENVS 260	3.0	EDUC 308	3.0	PHYS 151	3.0
PSY 101	3.0	NFS 100 & NFS 101	3.0	SOC 335	3.0	PSY 330	3.0
	9		**9**		**9**		**9**

Fourth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 336	3.0	EDUC 314	3.0	EDUC 355	3.0	EDUC 338	3.0
EDUC 411	3.0	PSY 320	3.0	ESTM 342	3.0	MTED 418	3.0
MTED 417	3.0	Free Elective	3.0	Free Elective	4.0	Free Elective	3.0
	9		**9**		**10**		**9**

Fifth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 405	1.0	EDUC 410	9.0	CHEM 111	4.0
EDUC 409	9.0			ECON 201	4.0
	10		**9**		**8**

Total Credits 180

*   Part-time Transfer Students do not take COOP 101, CIVC 101, and UNIV T101. Instead they take 3 additional credits of Free Electives.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (RtI); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: PK-4 and Special Education

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 188.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Concentration

This certification option within the BS in Elementary Education (p. 8) enables teachers to work with children in prekindergarten, kindergarten, and grades 1 through 4 (ages 3-9) across subject areas with the addition of being specialized to work with prekindergarten through secondary grade students at risk for disabilities or with disabilities. As with the Elementary PK-4 certification, the program covers required competencies such as child development, language development, early literacy and math foundations for preschool years, early intervention, integration of the arts for the developing child, and family and community partnerships.

Improvements in the diagnosis of learning disabilities at earlier ages have resulted in an increase in the number of students requiring special education. This program is designed to provide the information necessary to understand the complexities of the disabled learner's needs; modify a curriculum appropriately; provide remedial instruction; use technology to address the learner's needs/progress; and manage instruction for students with special needs in the inclusive classroom, as well as additional approaches to assessment and special education teaching techniques.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement [*]	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0

PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience [*]	1.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Special Education Core Courses		
EDEX 336	Special Education Law and Processes	3.0
EDEX 348	Emotional and Behavioral Support of Individuals with Disabilities	3.0
EDEX 349	High Incident Disabilities	3.0
EDEX 350	Teaching Individuals with Low Incident Disabilities	3.0
EDEX 352	Integrating Technology for Learning & Achievement	3.0
EDEX 355	Teaching Students with Autism Spectrum Disorders	3.0
EDEX 378	Special Education: Methods & Practices PK-12	3.0
EDEX 388	Implementing Academic Interventions in Inclusive Educational Environments	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDEX 414 [WI]	Special Education Student Teaching Seminar	9.0
Total Credits		**188.0**

[*]   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with a 3 credit elective choice of ESTM 342 or EDEX 375.

Sample Plan of Study

4 YR UG Co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	BIO 100 or 161	3.0	EDEX 142	3.0	VACATION	
EDUC 106	1.0	CIVC 101	1.0	EDUC 108	1.0		
EDUC 120	3.0	COM 111	3.0	ENGL 103 or 113	3.0		
ENGL 101 or 111	3.0	EDUC 107	1.0	MATH 173 or 107	3.0		
MATH 171	3.0	EDUC 121	3.0	MUSC 130	3.0		

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
UNIV T101	1.0	ENGL 102 or 112	3.0	PSY 101	3.0		
		MATH 172	3.0				
14			**17**		**16**		**0**
Second Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**	**Summer**	**Credits**
EDEX 344	3.0	BIO 101 or 162	3.0	EDUC 236	3.0	EDEX 350	3.0
EDEX 349	3.0	COOP 101	1.0	EDUC 326	3.0	EDUC 306	3.0
EDUC 205	1.0	EDEX 348	3.0	EDUC 365	3.0	EDUC 312	3.0
EDUC 308	3.0	EDEX 368	3.0	NFS 100	2.0	EDUC 324	3.0
English (Literature) elective: ENGL 200 - ENGL 360	3.0	EDUC 216	3.0	NFS 101	1.0	HIST 275	3.0
		EDUC 314	3.0	PSY 320	3.0		
		EDUC 316	3.0				
13			**19**		**15**		**15**
Third Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**	**Summer**	**Credits**
COOP EXPERIENCE		COOP EXPERIENCE		EDEX 378	3.0	EDUC 335	3.0
MTED 417	3.0	EDUC 336	3.0	EDEX 388	3.0	EDUC 338	3.0
				EDUC 305	1.0	EDUC 355	3.0
				EDUC 411	3.0	ENVS 260	3.0
				PHYS 151	3.0	MTED 418	3.0
				PSY 330	3.0		
3			**3**		**16**		**15**
Fourth Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**		
EDEX 336	3.0	EDEX 355	3.0	CHEM 111	4.0		
EDUC 405	1.0	EDEX 414	9.0	ECON 201	4.0		
EDUC 409	9.0	SOC 335	3.0	EDEX 352	3.0		
				EDLT 325	3.0		
13			**15**		**14**		

Total Credits 188

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies.* Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership.* Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University).* Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University).* Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University).* Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh).* Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University).* Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison).* Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College).* Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University).* Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University).* Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University).* Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University).* Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University).* Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland).* Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: Middle Level Math and English

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 180.0
Co-op Options: One Co-op (Four years)
Classification of Instructional (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Concentration

This certification option within the BS in Elementary Education (p. 8) enables to teachers to work with students in grades 4-6 across subjects and with students in grades 7-8 in the core academic subjects of mathematics and English.

This program addresses the complexities of adolescent development through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child.

In addition, this certification area provides: (1) training in how to effectively deliver standards-based academic math content based on age-appropriate understanding and individual and group's needs; (2) courses devoted to teaching, age-appropriate, reading skills, and how to teach and assess writing effectively, as well as a specialized course in the genre of young adult fiction.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education/Content Requirements

ARTH 101	History of Art I	3.0
BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENGL 304	Young Adult Fiction	3.0
ENVS 260	Environmental Science and Society	3.0
HIST 201	United States History to 1815	4.0
HIST 275	History of Pennsylvania	3.0
LING 101	Introduction to Linguistics	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MATH 205	Survey of Geometry	3.0
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
WRIT 225 [WI]	Creative Writing	3.0
or WRIT 301	Writing Poetry	
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0

EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 328	Language Arts Processes 4-8	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 361	Middle Years Science Methods	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
MTED 363	Middle Years Mathematics Methods (4-8)	1.5
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Free Electives		9.0
MTED 418	Mathematics Methods and Content	3.0
Total Credits		**180.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.0	CIVC 101	1.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	COM 111	3.0	EDUC 108	1.0		
EDUC 106	1.0	EDUC 107	1.0	ENGL 103 or 113	3.0		
EDUC 123	3.0	ENGL 102 or 112	3.0	ENVS 260	3.0		
ENGL 101 or 111	3.0	MATH 172	3.0	LING 101	3.0		
MATH 171	3.0	MUSC 130	3.0	MATH 107 or 173	3.0		
UNIV T101	1.0						
	17		**14**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 162	3.0	EDUC 306	3.0	EDEX 368	3.0	CHEM 111	4.0
COOP 101	1.0	EDUC 312	3.0	EDUC 216	3.0	EDLT 325	3.0
EDEX 344	3.0	EDUC 365	3.0	EDUC 308	3.0	EDUC 305	1.0
EDUC 205	1.0	PHYS 151	3.0	MATH 205	3.0	PSY 320	3.0
EDUC 223	3.0	WRIT 225 or 301	3.0	MTED 418	3.0	SOC 335	3.0
HIST 275	3.0						
PSY 101	3.0						
	17		**15**		**15**		**14**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	ECON 201	4.0
EDUC 361	1.5	EDUC 360	1.5	EDUC 316	3.0	EDUC 324	3.0
MTED 363	1.5	EDUC 362	1.5	EDUC 326	3.0	EDUC 328	3.0
				EDUC 355	3.0	ENGL 304	3.0
						PSY 330	3.0
	3		**3**		**12**		**16**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	ARTH 101	3.0
Free elective	3.0	Free elective	3.0	EDUC 405	1.0
				HIST 201	4.0
				NFS 100	2.0
				NFS 101	1.0
				Free elective	3.0
	12		**12**		**14**

Total Credits 180

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: Middle Level Science and English

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 180.0
Co-op Options: One Co-op (Four years)
Classification of Instructional (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Concentration

This certification option within the BS in Elementary Education (p. 8) enables teachers to work with students in grades 4-6 across subjects and with students in grades 7-8 in the core academic subjects of science and English.

This program addresses the complexities of adolescent development through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child.

In addition, this certification area provides: (1) training and methodology for teaching physical and life sciences (including using an inquiry-based model of learning, developing authentic assessments, drawing upon a variety of tools, and creating and maintaining a safe laboratory) as well as other skills necessary to meet the needs of diverse learners in science education; (2) courses devoted to teaching age-appropriate reading skills and how to teach and assess writing effectively, as well as a specialized course in the genre of young adult fiction.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education/Content Requirements

ARTH 101	History of Art I	3.0
BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 111	Principles of Communication	3.0

COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENGL 304	Young Adult Fiction	3.0
ENVS 260	Environmental Science and Society	3.0
Select one of the following		4.0
HIST 201	United States History to 1815	
or HIST 202	United States History, 1815-1900	
or HIST 203	United States History since 1900	
HIST 275	History of Pennsylvania	3.0
LING 101	Introduction to Linguistics	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
WRIT 225 [WI]	Creative Writing	3.0
or WRIT 301	Writing Poetry	
Free electives		9.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 328	Language Arts Processes 4-8	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 361	Middle Years Science Methods	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 363	Middle Years Mathematics Methods (4-8)	1.5

MTED 418	Mathematics Methods and Content	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**180.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.0	CIVC 101	1.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	COM 111	3.0	EDUC 108	1.0		
EDUC 106	1.0	EDUC 107	1.0	ENGL 103 or 113	3.0		
EDUC 123	3.0	ENGL 102 or 112	3.0	ENVS 260	3.0		
ENGL 101 or 111	3.0	MATH 172	3.0	LING 101	3.0		
MATH 171	3.0	MUSC 130	3.0	MATH 173 or 107	3.0		
UNIV T101	1.0						
	17		**14**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 162	3.0	EDUC 306	3.0	EDEX 368	3.0	CHEM 111	4.0
COOP 101	1.0	EDUC 312	3.0	EDUC 216	3.0	EDLT 325	3.0
EDEX 344	3.0	EDUC 365	3.0	EDUC 308	3.0	EDUC 305	1.0
EDUC 205	1.0	PHYS 151	3.0	MTED 418	3.0	PSY 320	3.0
EDUC 223	3.0	Free elective	3.0			SOC 335	3.0
HIST 275	3.0						
PSY 101	3.0						
	17		**15**		**12**		**14**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	ECON 201	4.0
EDUC 361	1.5	EDUC 360	1.5	EDUC 316	3.0	EDUC 324	3.0
MTED 363	1.5	EDUC 362	1.5	EDUC 326	3.0	EDUC 328	3.0
				EDUC 355	3.0	ENGL 304	3.0
				Free elective	3.0	PSY 330	3.0
	3		**3**		**15**		**16**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	ARTH 101	3.0
Free elective	3.0	WRIT 225 or 301	3.0	EDUC 405	1.0
				ESTM 342	3.0
				HIST 201, 202, or 203	4.0
				NFS 100	2.0
				NFS 101	1.0
	12		**12**		**14**

Total Credits 180

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University).* Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California).* Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head.* Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute.* Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University).* Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University).* Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies.* Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership.* Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University).* Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University).* Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University).* Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh).* Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University).* Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison).* Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College).* Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University).* Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: Middle Level Science and Math

Major: Elementary Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 180.0
Co-op Options: One Co-op (Four years)
Classification of Instructional (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Concentration

This certification option within the BS in Elementary Education (p. 8) enables teachers to work with students in grades 4-6 across subjects and with students in grades 7-8 in the core academic subjects of science and mathematics.

This program addresses the complexities of adolescent development through discussion of theories. It explores the middle school environment, developmentally appropriate middle school programs, strategies for supporting students through the transition to middle school, and the impact of peer pressure on the middle school child.

In addition, this certification area provides: (1) training in how to effectively deliver standards-based academic math content based on age-appropriate understanding, and individual and group's needs; (2) training and methodology for teaching physical and life sciences (including using an inquiry-based model of learning, developing authentic assessments, drawing upon a variety of tools, and creating and maintaining a safe laboratory) as well as other skills necessary to meet the needs of diverse learners in science education.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education/Content Requirements

ARTH 101	History of Art I	3.0
BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENGL 304	Young Adult Fiction	3.0
ENVS 260	Environmental Science and Society	3.0
Select one of the following		4.0
HIST 275	History of Pennsylvania	3.0
HIST 201	United States History to 1815	
or HIST 202	United States History, 1815-1900	
or HIST 203	United States History since 1900	
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MATH 205	Survey of Geometry	3.0
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0

NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
Free electives		12.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 328	Language Arts Processes 4-8	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 361	Middle Years Science Methods	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 363	Middle Years Mathematics Methods (4-8)	1.5
MTED 418	Mathematics Methods and Content	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**180.0**

Sample Plan of Study

4 Year, One Co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.0	CIVC 101	1.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	COM 111	3.0	EDUC 108	1.0		
EDUC 106	1.0	EDUC 107	1.0	ENGL 103 or 113	3.0		
EDUC 123	3.0	ENGL 102 or 112	3.0	ENVS 260	3.0		
ENGL 101 or 111	3.0	MATH 172	3.0	LING 101	3.0		
MATH 171	3.0	MUSC 130	3.0	MATH 173 or 107	3.0		
UNIV T101	1.0						
	17		**14**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 162	3.0	EDUC 306	3.0	EDEX 368	3.0	CHEM 111	4.0
COOP 101	1.0	EDUC 312	3.0	EDUC 216	3.0	EDLT 325	3.0

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDEX 344		3.0 EDUC 365		3.0 EDUC 308		3.0 EDUC 305	1.0
EDUC 205		1.0 PHYS 151		3.0 MATH 205		3.0 PSY 320	3.0
EDUC 223		3.0 Free Elective		3.0 MTED 418		3.0 SOC 335	3.0
HIST 275		3.0					
PSY 101		3.0					
	17		**15**		**15**		**14**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326		3.0 ECON 201	4.0
EDUC 361		1.5 EDUC 360		1.5 EDUC 316		3.0 EDUC 324	3.0
MTED 363		1.5 EDUC 362		1.5 EDUC 326		3.0 EDUC 328	3.0
				EDUC 355		3.0 ENGL 304	3.0
						PSY 330	3.0
	3		**3**		**12**		**16**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409		9.0 EDUC 410		9.0 ARTH 101	3.0
Free Elective		3.0 Free Elective		3.0 EDUC 405	1.0
				ESTM 342	3.0
				HIST 201	4.0
				NFS 100	2.0
				NFS 101	1.0
	12		**12**		**14**

Total Credits 180

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University).* Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University).* Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University).* Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh).* Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University).* Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison).* Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College).* Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University).* Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University).* Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University).* Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University).* Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University).* Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland).* Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University).* Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs.* Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education: Non-Certification

Major: Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 180.0
Co-op Options: One Co-op (Four years); No Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.0101
Standard Occupational Classification (SOC) code: 25-1081

About the Program

Note: Students will not receive Teaching Certification at the completion of this program.

The Bachelor of Science in Elementary Education Non-Certification track prepares students who are informed about theories of teaching and learning and recognize what happens in educational settings. Students then use that information to support teaching and learning in non-school-based settings such as educational non-profits, youth advocacy, or educational entrepreneurial ventures. Students learn skills and knowledge necessary to design,

develop, and implement learning environments for a variety of settings. Students will work with their academic advisor to select free elective coursework in creativity and innovation, learning technology, special education, sports leadership and coaching, or other education courses based on their interests.

Admission Requirements

- Three years of high school math (algebra I and II, geometry)
- One year of high school lab science
- Standard undergraduate application with essay and two letters of recommendation
- Standard standardized test scores

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement [*]	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English (Literature) Elective [**]		3.0
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100 & NFS 101	Nutrition, Foods, and Health and Introduction to Nutrition & Food	3.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience [*]	1.0
Pedagogy		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 210	Early Language Development	3.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0

EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 411	Family and Community Partnerships	3.0
Free Electives †		**50.0**
Total Credits		**180.0**

*   UNIV T101, COOP 101 and CIVC 101 are not required for Education transfer students, instead these 3 credits are replaced with ESTM 342.

**   English (Literature) elective: Select course between ENGL 200 [WI] - ENGL 365

†   Suggested Electives: CRTV 301, CRTV 302, CRTV 303, EDEX 368 [WI] , EDEX 375, EDLT 101, EDLT 103, EDLT 201, EDLT 238, EDLT 301, EDLT 353, EDUC 112, EDUC 113, EDUC 223, EDUC 314, EDUC 322, EDUC 355, EDUC 365, ESTM 342, MTED 418, MTED 428, SCL 101, SCL 102, SCL 201, SCL 203.

Sample Plan of Study

4 year, 1 co-op

On-campus Full-Time Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	CIVC 101	1.0	EDEX 142	3.0	VACATION	
EDUC 106	1.0	COM 111	3.0	EDUC 108	1.0		
EDUC 120	3.0	EDUC 107	1.0	EDUC 123	3.0		
ENGL 101 or 111	3.0	EDUC 121	3.0	ENGL 103 or 113	3.0		
MATH 171	3.0	ENGL 102 or 112	3.0	MATH 173 or 107	3.0		
UNIV T101	1.0	MATH 172	3.0	PSY 101	3.0		
	14		**14**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 101 or 161	3.0	BIO 101 or 162	3.0	EDUC 305	1.0	EDUC 210	3.0
CHEM 111	4.0	COOP 101 *		EDUC 236	1.0	EDUC 306	3.0
EDEX 344	3.0	EDUC 335	3.0	NFS 100 & NFS 101	3.0	EDUC 316	3.0
EDUC 205	1.0	MUSC 130	3.0	PSY 320	3.0	HIST 275	3.0
PSY 330	3.0	Free electives	3.0	Free electives	6.0	Free elective	3.0
Free elective	3.0						
	17		**16**		**16**		**15**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		ECON 201	4.0	EDLT 325	3.0
				EDUC 326	3.0	EDUC 312	3.0
				English (Literature) Elective: ENGL 200 - ENGL 365	3.0	EDUC 324	3.0
				SOC 335	3.0	EDUC 338	3.0
						Free elective	3.0
	0		**0**		**13**		**15**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 411	3.0	EDUC 216	3.0	EDUC 308	3.0
ENVS 260	3.0	Free electives	12.0	PHYS 151	3.0
Free electives	9.0			Free electives	8.0
	15		**15**		**14**

Total Credits 180

*   Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.
COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Transfer/Online Part-Time Plan of Study

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	EDUC 107	1.0	EDUC 108	1.0	ENGL 103 or 113	3.0
EDUC 106	1.0	EDUC 120	3.0	EDUC 121	3.0	EDUC 210	3.0
MATH 171	3.0	ENGL 102 or 112	3.0	EDEX 142	3.0	EDUC 210	3.0
ENGL 101 or 111	3.0	MATH 172	3.0	MATH 172	3.0	HIST 275	3.0
	10		**10**		**10**		**12**

Second Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 205	1.0	MUSC 130	3.0	EDUC 123	3.0	EDUC 312	3.0
EDEX 344	3.0	BIO 162	3.0	EDUC 236	3.0	EDUC 322	3.0
BIO 161	3.0	Free elective	3.0	EDUC 305	1.0	EDUC 335	3.0
Free elective	3.0			ENGL 205	3.0		
	10		**9**		**10**		**9**

Third Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 324	3.0	EDUC 314 (Or Free elective)	3.0	ECON 201	4.0	EDLT 325	3.0
EDUC 326	3.0	EDUC 316	3.0	EDUC 308	3.0	PHYS 151	3.0
PSY 101	3.0	NFS 100 & NFS 101	3.0	SOC 335	3.0	PSY 330	3.0
	9		**9**		**10**		**9**

Fourth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111	4.0	ENVS 260	3.0	COM 111	3.0	EDUC 338	3.0
EDUC 411	3.0	PSY 320	3.0	EDUC 355 (Or Free elective)	3.0	MTED 418 (Or Free elective)	3.0
Free elective	3.0	Free elective	3.0	ESTM 342	3.0	Free elective	3.0
	10		**9**		**9**		**9**

Fifth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits
Free electives	9.0	Free electives	9.0	Free electives	8.0
	9		**9**		**8**

Total Credits 180

Special Education PK-12

Major: Special Education PK-12
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 181.0
Co-op Options: No Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1001
Standard Occupational Classification (SOC) code: 25-2051; 25-2055; 25-2056; 20-2057; 25-2058

About the Program

Special educators are in a unique position to support diverse young learners to develop social, emotional, academic, and life skills that will serve them throughout their lives. The role of the special educator is challenging and rewarding and requires extensive knowledge and practical experience and insight into their learners' unique abilities and challenges. Drexel's BS in Special Education offers students the opportunity to develop professional knowledge and skills to assist these learners in a full- or part-time online option.

Admission Requirements

- HS Diploma or GED (in last 2 years) plus transcript
- SAT/ACT score no more than 5 years old

Degree Requirements

General Education/Content Requirements

Art History or Music Elective (Choose one):		3.0
ARTH 101	History of Art I	
ARTH 102	History of Art II	
ARTH 103	History of Art III	
ARTH 316	African Art	
MUSC 130	Introduction to Music	
BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
Science Elective (Choose One):		3.0-4.0
CHEM 111	General Chemistry I	
ENVS 260	Environmental Science and Society	
PHYS 131	Survey of the Universe	
PHYS 151	Applied Physics	
COM 111	Principles of Communication	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
HIST 275	History of Pennsylvania	3.0
MATH 107	Probability and Statistics for Liberal Arts	3.0
MATH 110	Precalculus	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
Pedagogy Requirements		
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 336	Early Literacy II	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5

EDUC 361	Middle Years Science Methods	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
EDUC 363	Middle Years Mathematics Methods	1.5
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Special Education Core Courses		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 336	Special Education Law and Processes	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 348	Emotional and Behavioral Support of Individuals with Disabilities	3.0
EDEX 349	High Incident Disabilities	3.0
EDEX 350	Teaching Individuals with Low Incident Disabilities	3.0
EDEX 352	Integrating Technology for Learning & Achievement	3.0
EDEX 355	Teaching Students with Autism Spectrum Disorders	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDEX 375	Teaching STEAM in an Inclusive Environment PK-12	3.0
EDEX 378	Special Education: Methods & Practices PK-12	3.0
EDEX 388	Implementing Academic Interventions in Inclusive Educational Environments	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDEX 414 [WI]	Special Education Student Teaching Seminar	9.0
Total Credits		**181.0-182.0**

Sample Plan of Study

First Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	EDUC 120	3.0	EDEX 142	3.0	EDUC 216	3.0
ENGL 101	3.0	EDUC 107	1.0	EDUC 121	3.0	ENGL 103	3.0
EDUC 106	1.0	ENGL 102	3.0	EDUC 108	1.0	HIST 275	3.0
PSY 101	3.0	MATH 171	3.0	MATH 172	3.0		
	10		**10**		**10**		**9**

Second Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 161	3.0	BIO 162	3.0	EDUC 236	3.0	Art History or Music Elective	3.0
EDEX 344	3.0	EDEX 368	3.0	EDUC 305	1.0	EDEX 336	3.0
EDUC 205	1.0	EDUC 322	3.0	EDUC 308	3.0	EDUC 312	3.0
MATH 107	3.0			EDUC 365	3.0		
	10		**9**		**10**		**9**

Third Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDEX 349	3.0	EDEX 355	3.0	EDEX 352	3.0	EDEX 350	3.0
EDEX 375	3.0	EDUC 316	3.0	Literature Elective	3.0	EDLT 325	3.0
MATH 110	3.0	NFS 100	2.0	Science Elective	3.0-4.0	EDUC 355	3.0
		NFS 101	1.0				
	9		**9**		**9-10**		**9**

Fourth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDEX 378	3.0	EDEX 348	3.0	EDEX 388	3.0	EDUC 360	1.5
EDUC 324	3.0	EDUC 314	3.0	EDUC 336	3.0	EDUC 361	1.5
EDUC 411	3.0	PSY 320	3.0	MTED 417	3.0	EDUC 362	1.5
						EDUC 363	1.5
	9		**9**		**9**		**6**

Fifth Year (Part-Time)

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 405	1.0	EDEX 414	9.0	COM 111	3.0	MTED 418	3.0
EDUC 409	9.0			ECON 201	4.0	PSY 330	3.0

	SOC 335	3.0	
10	9	10	6

Total Credits 181-182

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs.* Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University).* Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education.* Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University).* Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University).* Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology).* Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 181.5-195.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Program

The Bachelor of Science in Teacher Education program uses University-wide resources to prepare fully qualified teachers at the secondary education levels in various content areas. Drexel's Bachelor of Science in Secondary Education has technology at its core and with a strong emphasis on STEM subject areas. Certification in secondary education prepares teachers for classrooms in grades 7-12. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired. Available certification areas include:

- Biology (p. 46)
- Chemistry (p. 51)
- *NEW:* Computer Science
- Earth & Space Science (p. 60)
- English (p. 66)
- General Science (p. 71)
- Mathematics (p. 75)
- Physics (p. 80)
- Social Studies (p. 84)

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

More information is available at the School of Education (http://www.drexel.edu/soe/) website.

Education Faculty

Jennifer Adams, EdD *(Harvard University).* Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University).* Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Biology

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 195.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Biology Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) emphasizes coursework in the biological sciences, including genetics, morphology and physiology, biochemistry, microbiology, and ecology. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

Degree Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
HIST 289	History of Science: Enlightenment to Modernity	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Science Requirements		
BIO 131 & BIO 134	Cells and Biomolecules and Cells and Biomolecules Lab	5.0

BIO 132 & BIO 135	Genetics and Evolution and Genetics and Evolution Lab	5.0
BIO 133 & BIO 136	Physiology and Ecology and Anatomy and Ecology Lab	5.0
BIO 201	Human Physiology I	4.0
BIO 214	Principles of Cell Biology	4.0
BIO 215	Techniques in Cell Biology	3.0
BIO 218	Principles of Molecular Biology	4.0
BIO 219 [WI]	Techniques in Molecular Biology	3.0
BIO 228	Evolutionary Biology & Human Health	3.0
BIO 306	Biochemistry Laboratory	2.0
BIO 373	Developmental Biology	3.0
BIO 374	Developmental Biology Lab	2.0
BIO 404	Structure and Function of Biomolecules	4.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 241	Organic Chemistry I	4.0
CHEM 242	Organic Chemistry II	4.0
CHEM 244	Organic Chemistry Laboratory I	3.0
CHEM 245	Organic Chemistry Laboratory II	3.0
ENVS 230	General Ecology	3.0
ENVS 284	Physiological and Population Ecology	3.0
PHYS 152	Introductory Physics I	4.0
PHYS 153	Introductory Physics II	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI] or EDEX 366	Literacy and Content Skill Development PK-12 Literacy and Content Skill Development 7-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 105	Freshman Pedagogy Seminar	3.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 315	Secondary Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**195.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131 & BIO 134	5.0	BIO 132 & BIO 135	5.0	BIO 133 & BIO 136	5.0	VACATION	
EDUC 101	3.0	CIVC 101	1.0	EDEX 142	3.0		
EDUC 105		EDUC 105	1.0	EDUC 105	1.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	EDUC 123	3.0		

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
MATH 121	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
UNIV T101	1.0	MATH 122	4.0	MATH 123	4.0		
	17		**17**		**19**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 201	4.0	BIO 215	3.0	BIO 214	4.0	BIO 218	4.0
CHEM 101	3.5	CHEM 102	4.5	CHEM 241	4.0	CHEM 242	4.0
COOP 101	1.0	EDUC 216	3.0	EDEX 366 or 368	0.0-3.0	EDLT 325	3.0
EDEX 344	3.0	PSY 101	3.0	EDUC 305	1.0	EDUC 322	3.0
EDUC 205	1.0			EDUC 308	3.0	PHYS 153	4.0
EDUC 223	3.0			PHYS 152	4.0		
EDUC 365	3.0						
	18.5		**13.5**		**16-19**		**18**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		BIO 219	3.0	BIO 228	3.0
EDUC 315	3.0	CHEM 244	3.0	BIO 373	3.0	BIO 306	2.0
				BIO 374	2.0	EDUC 312	3.0
				EDLT 326	3.0	EDUC 324	3.0
				EDUC 316	3.0	ENVS 230	3.0
	3		**3**		**14**		**14**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
BIO 404	4.0	EDUC 410	9.0	CHEM 245	3.0
EDUC 409	9.0	ENVS 284	3.0	EDUC 405	1.0
				HIST 289	4.0
				PHIL 251	3.0
				PSY 320	3.0
	13		**12**		**14**

Total Credits 192-195

4 year, no co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131 & BIO 134	5.0	BIO 132 & BIO 135	5.0	BIO 133 & BIO 136	5.0	VACATION	
ENGL 101 or 111	3.0	CIVC 101	1.0	ENGL 103 or 113	3.0		
EDUC 101	3.0	ENGL 102 or 112	3.0	EDEX 142	3.0		
EDUC 105	1.0	EDUC 105	1.0	EDUC 105	1.0		
MATH 121	4.0	EDUC 113	3.0	EDUC 123	3.0		
UNIV T101	1.0	MATH 122	4.0	MATH 123	4.0		
	17		**17**		**19**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 201	4.0	BIO 215	3.0	BIO 214	4.0	VACATION	
CHEM 101	3.5	CHEM 102	4.5	CHEM 241	4.0		
EDEX 344	3.0	EDUC 216	3.0	EDEX 366 or 368	0.0-3.0		
EDUC 205	1.0	EDUC 322	3.0	EDUC 305	1.0		
EDUC 223	3.0	PSY 101	3.0	EDUC 308	3.0		
EDUC 365	3.0			PHYS 152	4.0		
	17.5		**16.5**		**16-19**		**0**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 218	4.0	BIO 219	3.0	BIO 228	3.0	VACATION	
CHEM 242	4.0	BIO 373	3.0	BIO 306	2.0		
EDLT 325	3.0	BIO 374	2.0	EDUC 312	3.0		
EDUC 315	3.0	CHEM 244	3.0	EDUC 324	3.0		
PHYS 153	4.0	EDLT 326	3.0	ENVS 230	3.0		
		EDUC 316	3.0				
	18		**17**		**14**		**0**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
BIO 404	4.0	EDUC 410	9.0	CHEM 245	3.0
EDUC 409	9.0	ENVS 284	3.0	EDUC 405	1.0
				HIST 289	4.0
				PHIL 251	3.0
				PSY 320	3.0
				Free elective	1.0
	13		12		15

Total Credits 192-195

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Chemistry

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 186.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) emphasizes coursework in areas such as organic chemistry, physical chemistry, biochemistry, analytical chemistry, and inorganic chemistry. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

General Education Requirements		
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	

ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English elective course between 200-329		3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 200	Multivariate Calculus	4.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Science Requirements		
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	4.5
CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 241	Organic Chemistry I	4.0
CHEM 242	Organic Chemistry II	4.0
CHEM 243	Organic Chemistry III	3.0
CHEM 244	Organic Chemistry Laboratory I	3.0
CHEM 245	Organic Chemistry Laboratory II	3.0
CHEM 253	Thermodynamics and Kinetics	4.0
CHEM 357 [WI]	Physical Chemistry Laboratory I	2.5
CHEM 420	Molecular Symmetry and Group Theory Applied Chemistry	3.0
CHEM 421	Inorganic Chemistry I	3.0
ENVS 401	Chemistry of the Environment	3.0
PHEV 145	Weather I: Climate and Global Change	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 201	Fundamentals of Physics III	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 315	Secondary Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		
EDUC 409 [WI]	Student Teaching Seminar I	9.0

EDUC 410 [WI]	Student Teaching (Chemistry)	9.0
Total Credits		**186.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	CHEM 102	4.5	CHEM 103	4.5	VACATION	
EDUC 101	3.0	CIVC 101	1.0	EDEX 142	3.0		
EDUC 106	1.0	EDUC 107	1.0	EDUC 108	1.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	EDUC 123	3.0		
MATH 121	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
PSY 101	3.0	MATH 122	4.0				
UNIV T101	1.0						
	18.5		**16.5**		**14.5**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 107	3.0	CHEM 231	2.0	CHEM 242	4.0	CHEM 243	3.0
BIO 108	1.0	CHEM 241	4.0	EDEX 368	3.0	EDLT 325	3.0
CHEM 230	4.0	EDUC 216	3.0	EDUC 305	4.0	EDUC 322	3.0
COOP 101	1.0	MATH 200	4.0	EDUC 308	4.0	PHEV 145	4.0
EDEX 344	3.0			PHYS 101	4.0	PHYS 102	4.0
EDUC 205	1.0						
EDUC 223	3.0						
EDUC 365	3.0						
	19		**13**		**15**		**17**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		CHEM 245	3.0	CHEM 253	4.0
EDUC 315	3.0	CHEM 244	3.0	EDLT 326	3.0	EDUC 312	3.0
				EDUC 316	3.0	EDUC 324	3.0
				PHYS 201	4.0	PHIL 251	3.0
	3		**3**		**13**		**13**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
CHEM 357	2.5	EDUC 410	9.0	CHEM 421	3.0
EDUC 409	9.0	CHEM 420	3.0	EDUC 405	1.0
ENGL 200 - ENGL 329	3.0			ENVS 401	3.0
				HIST 289	4.0
				PSY 320	3.0
	14.5		**12**		**14**

Total Credits 186

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head.* Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute.* Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University).* Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University).* Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies.* Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership.* Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University).* Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University).* Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University).* Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh).* Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University).* Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison).* Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director.* Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College).* Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University).* Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University).* Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-

Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Computer Science

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 183.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1316
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43)is a well-rounded program collaborating with the College of Computing and Informatics to prepare Computer Science teachers in the state of Pennsylvania. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, CS, EDUC, and ESTM courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway.

Additional Information

For more information about the program, visit the School of Education (https://nam10.safelinks.protection.outlook.com/?url=http
%3A%2F%2Fwww.drexel.edu%2Fsoe&data=04%7C01%7Cdha25%40drexel.edu%7C7724584055354fc5303b08d92f40ac3d
%7C3664e6fa47bd45a696708c4f080f8ca6%7C0%7C0%7C637592777068701188%7CUnknown
%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=jvgI5KX1BeChKo
%2BaLBJrasq6Yrd7lPxXQ1qpwk5FHG4%3D&reserved=0) website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
HIST 285	Technology in Historical Perspective	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 221	Discrete Mathematics	3.0
MATH 311	Probability and Statistics I	4.0
or MATH 410	Scientific Data Analysis I	
PHIL 311	Ethics and Information Technology	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
or CI 120	CCI Transfer Student Seminar	
Science Requirements		**12.0-15.0**
Choose one lab sequence		
BIO 131	Cells and Biomolecules	
& BIO 134	and Cells and Biomolecules Lab	

BIO 132 & BIO 135	Genetics and Evolution and Genetics and Evolution Lab	
BIO 133 & BIO 136	Physiology and Ecology and Anatomy and Ecology Lab	
CHEM 101 & CHEM 102 & CHEM 103	General Chemistry I and General Chemistry II and General Chemistry III	
PHYS 101 & PHYS 102 & PHYS 201	Fundamentals of Physics I and Fundamentals of Physics II and Fundamentals of Physics III	
Computer Science Requirements		
CS 150	Computer Science Principles	3.0
CS 171	Computer Programming I	3.0
or CS 175	Advanced Computer Programming I	
CS 172	Computer Programming II	3.0
or CS 176	Advanced Computer Programming II	
CS 260	Data Structures	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
CS 270	Mathematical Foundations of Computer Science	3.0
CS 375	Web Development	3.0
CS Electives		**24.0**
Recommended:		
CS 277	Algorithms and Analysis	
CS 281	Systems Architecture	
SE 181	Introduction to Software Engineering and Development	
SE 310	Software Architecture I	
Choose additional courses from CCI: CS, SE, INFO, CT 200 level and above		
Computing & Informatics Requirements		
CI 101	Computing and Informatics Design I	2.0
CI 102	Computing and Informatics Design II	2.0
CI 103	Computing and Informatics Design III	2.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
ESTM 335	Teaching Secondary Computer Science	3.0
Total Credits		**183.0-186.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CI 101	2.0	CI 102	2.0	CI 103	2.0	VACATION	
CS 150	3.0	CIVC 101	1.0	CS 172	3.0		
EDUC 101	3.0	CS 171	3.0	EDEX 142	3.0		
EDUC 106	1.0	EDUC 107	1.0	EDUC 108	1.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	EDUC 123	3.0		
MATH 121	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
UNIV T101	1.0	MATH 122	4.0	MATH 123	4.0		
	17		**17**		**19**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101	1.0	CS 260	3.0	CS 375	3.0	EDLT 326	3.0
CS 265	3.0	ECON 201	4.0	EDEX 368	3.0	EDUC 322	3.0
CS 270	3.0	EDUC 216	3.0	EDUC 305	1.0	PSY 101	3.0
EDEX 344	3.0	MATH 221	3.0	EDUC 308	3.0	CCI Electives	6.0
EDUC 205	1.0			PHYS 101	4.0		
EDUC 365	3.0			PHIL 311	3.0		
	14		**13**		**17**		**15**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDUC 316	3.0	EDUC 312	3.0
ESTM 335	3.0			HIST 285	4.0	EDUC 324	3.0
				MATH 311	4.0	PHYS 102	4.0
				PSY 320	3.0	CCI Electives	6.0
	3		**0**		**14**		**16**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 223	3.0	EDUC 410	9.0	EDUC 405	1.0
EDUC 409	9.0	PHYS 201	4.0	CCI Electives	12.0
	12		**13**		**13**

Total Credits 183

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Earth and Space Science

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 184.0
Co-op Options: One Co-op (Four years); No Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205

Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This option within the BS in Teacher Education (p. 43) emphasizes interdisciplinary study involving coursework in biology, chemistry, geology, physics, and atmospheric science. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English elective course between 200-329		3.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Science Requirements		
BIO 131 & BIO 134	Cells and Biomolecules and Cells and Biomolecules Lab	5.0
BIO 132 & BIO 135	Genetics and Evolution and Genetics and Evolution Lab	5.0
BIO 133 & BIO 136	Physiology and Ecology and Anatomy and Ecology Lab	5.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENVS 230	General Ecology	3.0
ENVS 260	Environmental Science and Society	3.0
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
GEO 101	Physical Geology	4.0
GEO 102	History of the Earth	4.0
GEO 207	Introduction to Oceanography	3.0
PHEV 145	Weather I: Climate and Global Change	4.0
PHEV 146	Weather II: Analysis and Forecasting	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 131	Survey of the Universe	3.0
Pedagogy Requirements		

EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 315	Secondary Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**184.0**

*   Students not participating in co-op will take one additional credit of Free Elective instead of COOP 101.

Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131 & BIO 134	5.0	BIO 132 & BIO 135	5.0	BIO 133 & BIO 136	5.0	VACATION	
ENGL 101 or 111	3.0	CIVC 101	1.0	EDEX 142	3.0		
EDUC 101	3.0	EDUC 107	1.0	EDUC 108	1.0		
EDUC 106	1.0	EDUC 113	3.0	EDUC 123	3.0		
MATH 121	4.0	ENGL 102	4.0	ENGL 103 or 113	3.0		
UNIV T101	1.0	MATH 122	1.0	MATH 123	4.0		
	17		**17**		**19**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	EDUC 216	3.0	EDEX 368	3.0	ECON 201	4.0
COOP 101*	1.0	ENVS 230	3.0	EDUC 305	3.0	EDLT 325	3.0
EDEX 344	3.0	ENVS 286	3.0	EDUC 308	3.0	EDUC 322	3.0
EDUC 205	1.0	GEO 102	4.0	HIST 289	4.0	PSY 101	3.0
EDUC 223	3.0			GEO 207	3.0	ENGL 200 - ENGL 329	3.0
EDUC 365	3.0						
ENVS 284	3.0						
	17.5		**13**		**14**		**16**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
EDUC 315			3.0	EDUC 316	3.0	EDUC 324	3.0
				PHYS 131	3.0	ENVS 260	3.0

				Spring	Credits	Summer	Credits
				GEO 101	4.0	PHIL 251	3.0
3		**0**		**13**		**12**	

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	CHEM 102	4.5
PHYS 101	4.0	PHYS 102	4.0	EDUC 405	1.0
				PHEV 145	4.0
				PHEV 146	4.0
				PSY 320	3.0
13		**13**		**16.5**	

Total Credits 184

*	Students not participating in co-op will take one additional credit of Free Elective instead of COOP 101.
	Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.
	COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

4 year, no co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 131 & BIO 134	5.0	BIO 132 & BIO 135	5.0	BIO 133 & BIO 136	5.0	VACATION	
EDUC 101	3.0	CIVC 101	1.0	EDEX 142	3.0		
EDUC 106	1.0	EDUC 107	1.0	EDUC 108	1.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	EDUC 123	3.0		
MATH 121	4.0	ENGL 102	3.0	ENGL 103 or 113	3.0		
UNIV T101	1.0	MATH 122	4.0	MATH 123	4.0		
	17		**17**		**19**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	EDUC 216	3.0	EDEX 368	3.0	VACATION	
EDEX 344	3.0	EDUC 322	3.0	EDUC 308	3.0		
EDUC 205	1.0	ENVS 230	3.0	EDUC 305	1.0		
EDUC 223	3.0	ENVS 286	3.0	HIST 289	4.0		
EDUC 365	3.0	GEO 102	4.0	GEO 207	3.0		
ENVS 284	3.0						
	16.5		**16**		**14**		**0**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ECON 201	4.0	EDLT 326	3.0	EDUC 324	3.0	VACATION	
EDLT 325	3.0	EDUC 316	3.0	EDUC 312	3.0		
EDUC 315	3.0	GEO 101	4.0	ENVS 260	3.0		
PSY 101	3.0	PHYS 131	3.0	PHIL 251	3.0		
ENGL 200 - ENGL 329	3.0						
	16		**13**		**12**		**0**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	CHEM 102	4.5
PHYS 101	4.0	PHYS 102	4.0	EDUC 405	1.0
				PHEV 145	4.0
				PHEV 146	4.0
				PSY 320	3.0
				Free elective *	1.0
13		**13**		**17.5**	

Total Credits 184

*	Students not participating in co-op will not take COOP 101; 1 credit of Free Elective will be added in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education.* Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University).* Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University).* Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology).* Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: English

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 182.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1305
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) emphasizes coursework in areas such as literature and writing, young adult fiction, and techniques for effectively teaching reading and writing skills. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

ARTH 101	History of Art I	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENVS 260	Environmental Science and Society	3.0
Select one American History course:		4.0
HIST 201	United States History to 1815	

HIST 202	United States History, 1815-1900	
HIST 203	United States History since 1900	
INFO 101	Introduction to Computing and Security Technology	3.0
LING 101	Introduction to Linguistics	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 131	Survey of the Universe	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 335	Sociology of Education	3.0
WRIT 225 [WI]	Creative Writing	3.0
WRIT 301 [WI]	Writing Poetry	3.0
UNIV T101	The Drexel Experience	1.0
Science Sequence		**6.0-8.0**
Select one of the following:		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
or		
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	
English Requirements (option to minor in English)		
ENGL 200 [WI]	Classical to Medieval Literature	3.0
ENGL 201	Renaissance to the Enlightenment	3.0
ENGL 204	Post-Colonial Literature	3.0
ENGL 205 [WI]	American Literature I	3.0
ENGL 206 [WI]	American Literature II	3.0
ENGL 211 [WI]	British Literature I	3.0
ENGL 212	British Literature II	3.0
ENGL 304	Young Adult Fiction	3.0
ENGL 325	Topics in World Literature	3.0
ENGL 335	Mythology	3.0
ENGL 355 [WI]	Women and Literature	3.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
or EDEX 366	Literacy and Content Skill Development 7-12	
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 358	English Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		

Course	Title	Credits
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Free Elective		3.0
Total Credits		**182.0-184.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111 or PHYS 170		ARTH 101	3.0-4.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	CHEM 112 or PHYS 175		EDUC 108	3.0-4.0		1.0
EDUC 106	1.0	CIVC 101	1.0	EDUC 123	1.0		3.0
ENGL 101 or 111	3.0	EDUC 107	1.0	ENGL 103 or 113	1.0		3.0
MATH 171	3.0	EDUC 113	3.0	MATH 173	3.0		3.0
PSY 101	3.0	ENGL 102 or 112	3.0	PHYS 131	3.0		3.0
UNIV T101	1.0	MATH 172	3.0		3.0		
	17-18		**17-18**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101	1.0	EDUC 216	3.0	COM 230	3.0	ECON 201	4.0
EDEX 344	3.0	ENGL 201	3.0	EDEX 368	3.0	EDLT 325	3.0
EDUC 205	1.0	INFO 101	3.0	EDUC 305	1.0	EDUC 322	3.0
EDUC 223	3.0	LING 101	3.0	EDUC 308	3.0	HIST 201, 202, or 203	4.0
EDUC 365	3.0	NFS 100 & NFS 101	3.0	ENVS 260	3.0		
ENGL 200	3.0	WRIT 301	3.0		3.0		
WRIT 225	3.0						
	17		**18**		**13**		**14**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDUC 316	3.0	EDUC 312	3.0
EDUC 358	3.0	ENGL 211	3.0	ENGL 304	3.0	EDUC 324	3.0
				PSY 320	3.0	ENGL 212	3.0
				SOC 335	3.0	ENGL 335	3.0
	3		**3**		**12**		**12**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	EDUC 405	1.0
ENGL 204	3.0	ENGL 335	3.0	ENGL 205	3.0
				ENGL 206	3.0
				ENGL 325	3.0
				MUSC 130	3.0
				Free Elective	3.0
	12		**12**		**16**

Total Credits 182-184

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: General Science

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 181.5
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) is a well-rounded program incorporating biology, chemistry, mathematics, and physics. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English (ENGL) course between 200-329		3.0
HIST 283	Technology and Identity	4.0
HIST 285	Technology in Historical Perspective	4.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Free Electives		6.0
Science Requirements		
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5

CHEM 103	General Chemistry III	4.5
ENVS 284	Physiological and Population Ecology	3.0
ENVS 286	Community and Ecosystem Ecology	3.0
GEO 101	Physical Geology	4.0
GEO 102	History of the Earth	4.0
GEO 207	Introduction to Oceanography	3.0
PHEV 145	Weather I: Climate and Global Change	4.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
PHYS 131	Survey of the Universe	3.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 315	Secondary Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**181.5**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 107	3.0	BIO 109	3.0	EDEX 142	3.0	VACATION	
BIO 108	1.0	BIO 110	1.0	EDUC 108	1.0		
EDUC 101	3.0	CIVC 101	1.0	EDUC 123	3.0		
EDUC 106	1.0	EDUC 107	1.0	ENGL 103 or 113	3.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	GEO 101	4.0		
MATH 121	4.0	ENGL 102 or 112	3.0	MATH 123	4.0		
UNIV T101	1.0	MATH 122	4.0				
	16		**16**		**18**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 101	3.5	CHEM 102	4.5	CHEM 103	4.5	EDLT 325	3.0
COOP 101	1.0	EDUC 216	3.0	EDEX 368	3.0	EDUC 322	3.0
EDEX 344	3.0	ENVS 286*	3.0	EDUC 305	1.0	PHIL 251	3.0
EDUC 205	1.0	GEO 102	4.0	EDUC 308	3.0	PHYS 131	3.0
EDUC 223	3.0	HIST 283	4.0	PSY 101	3.0		
EDUC 365	3.0						

ENVS 284	3.0			
	17.5	**18.5**	**14.5**	**12**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
EDUC 315			3.0	EDUC 316	3.0	EDUC 324	3.0
				PSY 320	3.0	HIST 285	4.0
				PHYS 101	4.0	PHYS 102	4.0
	3		**0**		**13**		**14**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409		EDUC 410	9.0	EDUC 405	1.0
Free elective	9.0	Free elective	3.0	ENGL 200 - ENGL 329	3.0
	3.0			GEO 207	3.0
				HIST 289	4.0
				PHEV 145	4.0
	12		**12**		**15**

Total Credits 181.5

*   Students must take ENVS 286 no later than Third Year, Winter term. Course is offered every other year.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Mathematics

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 185.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) emphasizes coursework in areas of mathematics such as calculus, linear algebra, differential equations, probability and statistics, techniques of mathematical proof, and discrete mathematics. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://www.drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
CS 150	Computer Science Principles	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English elective course between 200-329		3.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Mathematics Requirements		
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 205	Survey of Geometry	3.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 221	Discrete Mathematics	3.0
MATH 311	Probability and Statistics I	4.0
MATH 312	Probability and Statistics II	4.0
MATH 331	Abstract Algebra I	4.0
Science Requirements		
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENVS 260	Environmental Science and Society	3.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0

EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
MTED 419	Teaching Secondary Mathematics	3.0
MTED 428	Cultural and Historical Significance of Mathematics	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**185.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	CIVC 101	1.0	BIO 107	3.0	VACATION	
EDUC 106	1.0	EDUC 107	1.0	BIO 108	1.0		
ENGL 101 or 111	3.0	EDUC 113	3.0	EDEX 142	3.0		
MATH 121	4.0	ENGL 102 or 112	3.0	EDUC 108	1.0		
PSY 101	3.0	MATH 122	4.0	EDUC 123	3.0		
UNIV 101	1.0	PHIL 251	3.0	ENGL 103 or 113	3.0		
				MATH 123	4.0		
	15		**15**		**18**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101[*]	1.0	ECON 201	4.0	CHEM 101	3.5	BIO 109	3.0
EDEX 344	3.0	EDUC 216	3.0	EDEX 368	3.0	BIO 110	1.0
EDUC 205	1.0	INFO 108 or CS 150	3.0	EDUC 305	1.0	CHEM 102	4.5
EDUC 223	3.0	MATH 201	4.0	EDUC 308	3.0	EDLT 325	3.0
EDUC 365	3.0			MATH 205	3.0	EDUC 322	3.0
HIST 289	4.0			MATH 210	4.0	MTED 428	3.0
MATH 200	4.0						
	19		**14**		**17.5**		**17.5**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
MTED 419	3.0			EDUC 316	3.0	EDUC 324	3.0
				MATH 220	3.0	MATH 221	3.0
				PHYS 101	4.0	PHYS 102	4.0
	3		**0**		**13**		**13**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	EDUC 410	9.0	EDUC 405	1.0
MATH 331	4.0	MATH 311	4.0	ENGL 200 - ENGL 395	3.0
				ENVS 260	3.0
				MATH 312	4.0
				PSY 320	3.0
	13		**13**		**14**

Total Credits 185

[*] Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.
COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute.* Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies.* Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education.* Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University).* Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University).* Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology).* Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Physics

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 188.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) emphasizes coursework in physics and atmospheric science, including topics such as classical mechanics, electromagnetic fields, quantum mechanics, physics of high fidelity, and survey of the universe. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (http://drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English elective course between 200-329		3.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0

MATH 201	Linear Algebra	4.0
MATH 210	Differential Equations	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Science Requirements		
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0
CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENVS 260	Environmental Science and Society	3.0
PHEV 145	Weather I: Climate and Global Change	4.0
PHYS 113	Contemporary Physics I	5.0
PHYS 114	Contemporary Physics II	5.0
PHYS 115	Contemporary Physics III	5.0
PHYS 131	Survey of the Universe	3.0
PHYS 201	Fundamentals of Physics III	4.0
PHYS 217	Thermodynamics	4.0
PHYS 311	Classical Mechanics I	4.0
PHYS 321	Electromagnetic Fields I	4.0
PHYS 326	Quantum Mechanics I	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 315	Secondary Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**188.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
BIO 107	3.0	BIO 109	3.0	EDEX 142	3.0	VACATION	
BIO 108	1.0	BIO 110	1.0	EDUC 108	1.0		
EDUC 101	3.0	CIVC 101	1.0	EDUC 123	3.0		
EDUC 106	1.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
ENGL 101 or 111	3.0	EDUC 107	1.0	MATH 123	4.0		

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
MATH 121	4.0	EDUC 113	3.0	PHIL 251	3.0		
UNIV 101	1.0	MATH 122	4.0				
	16		**16**		**17**		**0**
Second Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**	**Summer**	**Credits**
CHEM 101	3.5	CHEM 102	4.5	EDEX 368	3.0	EDLT 325	3.0
COOP 101*	1.0	EDUC 216	3.0	EDUC 305	1.0	EDUC 322	3.0
EDEX 344	3.0	MATH 200	4.0	EDUC 308	3.0	ENVS 260	3.0
EDUC 205	1.0	PHYS 114	5.0	PHYS 115	5.0	HIST 289	4.0
EDUC 223	3.0			PSY 101	3.0		
EDUC 365	3.0						
PHYS 113	5.0						
	19.5		**16.5**		**15**		**13**
Third Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**	**Summer**	**Credits**
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
EDUC 315	3.0			EDUC 316	3.0	EDUC 324	3.0
				MATH 201	4.0	MATH 210	4.0
				PSY 320	3.0	PHYS 131	3.0
	3		**0**		**13**		**13**
Fourth Year							
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**		
EDUC 409	9.0	EDUC 410	9.0	EDUC 405	1.0		
PHYS 217	4.0	PHYS 311	4.0	ENGL 200 - ENGL 329	3.0		
PHYS 321	4.0			PHEV 145	4.0		
				PHYS 326	4.0		
				PHYS 201	4.0		
	17		**13**		**16**		

Total Credits 188

*   Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.
COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education: Social Studies

Major: Teacher Education
Degree Awarded: Bachelor of Science (BS)
Calendar Type: Quarter
Total Credit Hours: 187.0
Co-op Options: One Co-op (Four years)
Classification of Instructional Programs (CIP) code: 13.1205

Standard Occupational Classification (SOC) code: 25-2031

About the Concentration

Certification is for grades 7-12

This certification option within the BS in Teacher Education (p. 43) is designed to prepare candidates to teach social studies using appropriate pedagogy strategies. Topics include history, geography, civics, economics, and psychology. Candidates may work with their academic advisor to satisfy teacher certification requirements for multiple areas, if desired.

The program requires that candidates have a B average (3.0 GPA) in content courses needed for teacher certification in addition to the grade of B or better in each EDEX, EDLT, EDUC, and MTED courses throughout their time in the program. These requirements must be satisfied in order for Drexel to recommend the candidates for teacher certification upon graduation and/or be considered to have completed the program.

Candidates pursuing the appropriate majors in the College of Arts and Sciences may also complete the requirements for certification within their area of study through our DragonsTeach certification pathway. For more information, contact the program coordinator for the School of Education at 215-895-6770.

Additional Information

For more information about the program, visit the School of Education (https://drexel.edu/soe/) website.

Degree Requirements

General Education Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
ANTH 110	Human Past: Anthropology and Prehistoric Archeology	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENGL 205 [WI]	American Literature I	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
PSY 101	General Psychology I	3.0
PSY 150	Introduction to Social Psychology	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 101	Introduction to Sociology	3.0
SOC 210	Race, Ethnicity and Social Inequality	4.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
Social Studies Content Requirments:		
Select two:		8.0
HIST 161	Themes in World Civilization I	
HIST 162	Themes in World Civilization II	
HIST 163	Themes in World Civilization III	
HIST 201	United States History to 1815	4.0
HIST 202	United States History, 1815-1900	4.0
HIST 203	United States History since 1900	4.0
HIST 212	Themes in African-American History	4.0
HIST 214	United States Civil Rights Movement	4.0
HIST 275	History of Pennsylvania	3.0
PSCI 110	American Government	4.0
PSCI 140	Comparative Politics I	4.0
PSCI 150	International Politics	4.0
PSCI 220	Constitutional Law I	4.0

PSCI 240	Comparative Politics II	4.0
PSCI 375	Politics of Immigration	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 112	Integrative Instruction: Focus on World Geography	3.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 356	Secondary Social Studies Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
Total Credits		**187.0**

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	ANTH 101	3.0	ANTH 110	3.0	VACATION	
EDUC 106	1.0	CIVC 101	1.0	EDEX 142	3.0		
ENGL 101 or 111	3.0	EDUC 107	3.0	EDUC 108	1.0		
MATH 171	3.0	EDUC 113	3.0	EDUC 123	3.0		
HIST 161	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
PSY 101	3.0	HIST 162 or 163	4.0	MATH 173	3.0		
UNIV T101	1.0	MATH 172	3.0				
	18		**18**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101*	1.0	EDUC 216	3.0	EDEX 368	3.0	EDLT 325	3.0
EDEX 344	3.0	HIST 201	4.0	EDUC 308	3.0	EDUC 322	3.0
EDUC 112	3.0	HIST 214	4.0	EDUC 305	1.0	HIST 275	3.0
EDUC 205	1.0	PSCI 110	4.0	EDUC 202	4.0	PSCI 375	4.0
EDUC 223	3.0	PSY 150	3.0	HIST 203	3.0	SOC 101	3.0
EDUC 365	3.0			PSCI 140	4.0		
	14		**18**		**19**		**16**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
EDUC 356	3.0			EDUC 316	3.0	EDUC 324	3.0
				PSY 320	3.0	PSCI 150	4.0
				SOC 335	3.0	SOC 210	4.0
	3		**0**		**12**		**14**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDUC 409	9.0	ECON 201	4.0	ECON 202	4.0

PSCI 220	4.0	EDUC 410	9.0	EDUC 405	1.0
				HIST 212	4.0
				PSCI 240	4.0
	13		**13**		**13**

Total Credits 187

*   Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education PK-4th Grade BS / Creativity & Innovation MS

Major: Elementary Education, PK-4 Grade and Creativity & Innovation
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 225.0
Co-op Options: One Co-op (Five years)
Classification of Instructional Programs (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2031

About the Program

Drexel University School of Education's Teacher Education programs have always been on the leading edge of the use of new pedagogies to improve student learning outcomes, new models of student teaching and conducting field experience placements, and ways of integrating technology in the teaching and learning. Coupling the Bachelor of Science in Elementary Education (Grades PK-4) degree with the School of Education's Master of Science in Creativity & Innovation to create an accelerated BS/MS degree is just another in a long list of innovations that helps ensure that Drexel's programs remains the leading edge leader in producing outstanding teachers.

This BS/MS Education and Creativity & Innovation program attracts pre-service teachers who envision preparing their students for the new economy(s) and jobs, as well as for the challenges and adventures that will continue to unfold throughout the 21st century.

Twenty-first century students deserve 21st century teachers and education leaders, and this accelerated BS/MS program prepares the pre-service with the teaching and creativity mindsets to excel in that world.

Creativity research makes clear that teachers who understand creativity—what it is and what it is not—as well as their own creative strength areas, are better able to recognize creativity in their students and capitalize on the knowledge to help advance their students academically. The coursework in the Creativity & Innovation component of the BS/MS degree specifically blends the cognitive theories and neuroscience of creativity toward assisting the pre-service teacher's understanding of creativity, the hands-on tools and techniques of actively developing their students' creativity mindsets through creating school and classroom environments that allow creativity and innovation to flourish, and the ability to build collaboration with colleagues and school leadership to implement and adapt those tools and techniques for the benefit of all within the school.

The coursework experience is very hands-on and so powerfully interesting! The future is all about the Creativity & Innovation's program outcomes, i.e., the abilities and creativity mindset for: readily adapting to change, recognizing and identifying the real issue behind the issue, quickly generating plausible and creative solutions to identified issues, using learned creative problem-solving methods to employ methodical analysis of a menu of creative solutions, providing a translation of the latest research in creativity and innovation so as to apply to academic settings, and your serving as a leader to your future students and colleagues for fostering creative and innovative environments to learn.

Admission Requirements

BS Candidate will complete the BS/MS application and have of 3.0 GPA or higher at the time of admittance to the BS/MS program when they have achieved between 90.0 and 120.0 credits. The BS/MS candidate must maintain an overall GPA of 3.0 or above as well as each term.

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement [*]	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0

MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience *	1.0
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
Free electives		10.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 210	Early Language Development	3.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in Creativity & Innovation Core		
CRTV 501	Foundations in Creativity	3.0
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 615	Neuroscience, Creativity and Innovation	3.0
CRTV 650	Current Trends in Creativity & Innovation	3.0
CRTV 660	Diagnostic Creative Intervention	3.0
EDCR 510	Leadership in Educational Contexts and Systems	3.0
EDCR 514	Diversity, Equity, and Social Justice in Education	3.0
MS in Creativity & Innovation Capstone Sequence		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	

or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0-4.5
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Concentration Course Options (Select one concentration from the options below)		**12.0**
Human Resource Development		
EHRD 500	Foundations of Human Resources Development	
EHRD 602	Coaching and Mentoring for Sustainable Learning	
EHRD 611	Organization Development and Change	
EHRD 612	Strategic Human Resource Development	
or EHRD 660	Principles of Adult Learning	
Global & International Education		
EDGI 503	Global, International & Comparative Education	
EDGI 510	Culture, Society & Education in Comparative Perspective	
EDGI 522	Education for Global Citizenship, Sustainability, and Social Justice	
EDGI 524	Measuring the World: Education and National Development	
Higher Education		
EDHE 501	Foundations of Higher Education and Governance	
EDHE 531	Legal Issues & Ethics in Higher Education	
EDHE 607	Higher Education Career Development, Leadership & Application	
EHRD 660	Principles of Adult Learning	
Learning Technologies		
EDLT 503	The Learning Sciences	
or EDLT 537	Technologies for Performance Support	
EDLT 512	Using and Integrating Learning Technologies	
EDLT 551	Instructional Design Methods	
ELL 501	The Purpose and Business of E-Learning	
Learning in Game-Based Environments		
EDLT 541	Foundations of Game-Based Learning	
EDLT 543	Play & Learning in a Participatory Culture	
EDLT 554	Learning with Social Media and Mobiles	
ELL 504	Learning Technologies & Disabilities	
Custom-Designed Concentration		
A custom-designed concentration will consist of 12.0 professional electives that will be selected in consultation with the Program Director and/or Advisor. You may also choose to declare a Graduate Minor.		
Total Credits		**225.0-226.5**

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

Sample Plan of Study

4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate status in the fifth and final year.

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 106	1.0	BIO 100 or 161	3.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	CIVC 101[*]	1.0	EDUC 108	1.0		
EDUC 120	3.0	COM 111	3.0	ENGL 103 or 113	3.0		
ENGL 101	3.0	EDUC 107	1.0	MATH 173 or 107	3.0		
MATH 171	3.0	EDUC 121	3.0	MUSC 130	3.0		
UNIV T101	1.0	ENGL 102 or 112	3.0	PSY 101	3.0		
		MATH 172	3.0				
	14		**17**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111	4.0	BIO 101 or 161	3.0	EDUC 236	3.0	EDUC 210	3.0
EDEX 344	3.0	COOP 101[*]	1.0	EDUC 326	3.0	EDUC 306	3.0
EDUC 205	1.0	EDEX 368	3.0	EDUC 336	3.0	EDUC 312	3.0
EDUC 308	3.0	EDUC 216	3.0	EDUC 365	3.0	EDUC 335	3.0
PSY 330	3.0	EDUC 314	3.0	NFS 100	2.0	HIST 275	3.0
		EDUC 316	3.0	NFS 101	1.0	MTED 417	3.0

				Spring	Credits	Summer	Credits
				PSY 320	3.0		
14		**16**		**18**		**18**	

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		ECON 201	4.0	EDLT 325	3.0
				EDUC 305	1.0	EDUC 324	3.0
				ESTM 342	3.0	EDUC 338	3.0
				PHYS 151	3.0	EDUC 355	3.0
				(UG) English (Literature) Elective: ENGL 200 - ENGL 360	3.0	MTED 418	3.0
				CRTV 501	3.0	CRTV 502	3.0
	0		**0**		**17**		**18**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 405		EDUC 410	1.0	ENVS 260	9.0	Student classified as Graduate Student	3.0
EDUC 409		SOC 335	9.0	(UG) Free electives	3.0	CRTV 615	10.0
EDUC 411		(GR) MS Concentration Course	3.0	CRTV 503	3.0	CRTV 650	3.0
						(GR) MS Concentration Course	3.0
	13		**15**		**16**		**9**

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits		
EDCR 510		EDCR 514	3.0	CRTV 660	3.0		
EDU 780	3.0	EDUL 780, EDUT 780, or EDUP 780	3.0	EDUL 781, EDUT 780, or EDUP 780	3.0-4.5		
(GR) MS Concentration Course	3.0	(GR) MS Concentration Course	3.0		3.0		
	9		**9**		**6-7.5**		

Total Credits 225-226.5

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with free electives.

Elementary Education PK4 BS / Teaching, Learning & Curriculum MS

Major: Elementary Education, PK-4; Teaching, Learning and Curriculum
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 225.0
Co-op Options: One Co-op
Classification of Instructional Programs (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Program

The BS/MS in Elementary Education (PK-4) and Teaching, Learning and Curriculum offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Elementary/PK-4) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).

The BS/MS in Elementary Education and Teaching, Learning and Curriculum (Advanced Track) prepares students academically and practically for careers in PK–12 teaching or other educational settings, including capabilities to:

- Demonstrate professional ethics and independent and creative academic best practices that exhibit outstanding leadership, organizational, cross cultural, inter-personal and advocacy skills including the ability to communicate effectively with internal and external groups.
- Understand the changing role of teachers in increasingly diverse societies
- Demonstrate a strong academic background in all subject areas that meet PDE requirements including literacy, language and STEM areas
- Demonstrate the ability to create and maintain a positive and democratic classroom climate for students
- Demonstrate a thorough understanding of child development in their ability to develop and implement learning opportunities that are unique to every child

- Develop creative academic leadership skills with a global perspective on current educational issues, knowledge of best pedagogical practices, tools to effectively integrate technology in curriculum, assessment and instruction, and a strong academic background in all subject areas that meet PDE content requirements.
- Develop competencies to become reflective practitioners who are lifelong learners, who base their practice on theory, research, and developmentally appropriate pedagogy by analyzing, implementing, and evaluating existing and new instructional strategies and practices in a variety of educational institutions/organizations.
- Demonstrate advanced teaching knowledge and skills well beyond that required for initial Pennsylvania certification
- Develop advanced skills to function in a variety of roles as instructors, instructional leaders or researchers in local, state, national and international organizations, foundations, associations, corporations and private educational institutions.
- Have in-depth knowledge of both public and private (non-profit and for-profit) institutions as well as small and large institutions.

Admission Requirements

Admission requirements are the same as the BS in Elementary Education. The BS/MS application must be submitted during sophomore year before 120.0 credits have been completed with a cumulative 3.0 GPA to gain acceptance into BS/MS program. Continuation as a BS/MS student in Teaching, Learning and Curriculum (Advanced Track) requires maintaining a minimum term and cumulative 3.0 GPA.

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement *	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience *	1.0
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
Free electives		10.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment (MS in TLC Core)	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0

EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 210	Early Language Development	3.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0
EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
ESTM 342	Teaching Engineering Concepts to Children	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non-Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction (or 500-800 level Professional Elective) [**]	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Organization Courses (Choose 2)		**6.0**
EDPO 620	Education Policy: Concepts, Issues, and Applications	
or EDAM 705	School Law and Politics	
or EDUC 804	Program Evaluation in Organizations	
MS in TLC Capstone Sequence [***]		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUP 780	Practitioner Capstone Course I	
or EDUT 780	Thesis Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUP 781	Practitioner Capstone Course II	
or EDUT 781	Thesis Capstone Course II	
Professional or Concentration Electives [†]		**15.0**
Total Credits		**225.0**

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3.0 credits are replaced with free electives.

**   BS/MS ELEM students who took EDUC 324 will take graduate-level professional electives instead of EDUC 524.

***   Capstone Sequence I & II: Choose one sequence - EDUL 780 & EDUL 781, EDUP 780 & EDUC 781 or EDUT 780 & EDUT 781

†   Complete 15.0 graduate elective credits (500-799) in EDUC, EDEX, EDGI, EDAM, EHRD, EDHE, CRTV, MTED, EDLT, EDLS, ELL, ABA, EDPO, SCL, ENTP, or ESTM.

Sample Plan of Study

4+1, 1 co-op (Accelerated program completed in 5 years)

Students complete undergraduate requirements in four years, then convert to graduate stats in the fifth and final year.

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	BIO 100	3.0	EDEX 142	3.0	VACATION	
EDUC 106	1.0	CIVC 101	1.0	EDUC 108	1.0		
EDUC 120	3.0	COM 111	3.0	ENGL 103	3.0		
ENGL 101	3.0	EDUC 107	1.0	MATH 173	3.0		
MATH 171	3.0	EDUC 121	3.0	MUSC 130	3.0		
UNIV T101	1.0	ENGL 102	1.0	PSY 101	3.0		
		MATH 172	3.0				
	14		**17**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111	4.0	BIO 101	3.0	EDUC 236	3.0	EDUC 210	3.0
EDEX 344	3.0	COOP 101	1.0	EDUC 326	1.0	EDUC 312	3.0
EDUC 205	1.0	EDEX 368	3.0	EDUC 365	3.0	EDUC 335	3.0
EDUC 308	3.0	EDUC 216	3.0	NFS 100	2.0	EDUC 306	3.0
PSY 330	3.0	EDUC 314	3.0	NFS 101	1.0	HIST 275	3.0
(UG) ENGL (Literature) elective: ENGL 200-ENGL 360	3.0	EDUC 316	3.0	PSY 320	3.0		
	17		**16**		**15**		**15**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		ECON 201	4.0	EDLT 325	3.0
MTED 417	3.0	EDUC 336	3.0	EDUC 305	1.0	EDUC 324	3.0
				ESTM 342	3.0	EDUC 338	3.0
				PHYS 151	3.0	EDUC 355	3.0
				(GR) MS Professional Elective	3.0	MTED 418	3.0
						(GR) MS Professional Elective	3.0
	3		**3**		**14**		**18**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 405	1.0	EDUC 410	9.0	ENVS 260	3.0	EDAM 705	3.0
EDUC 409	9.0	SOC 335	3.0	(UG) Free Electives	10.0	EDUC 524 (or 500-800 level Professional Elective)[***]	3.0
EDUC 411	3.0	EDLT 532	3.0	EDAM 714	3.0	EDUC 530	3.0
EDPO 620 or EDUC 804	3.0			Student converts to Grad status at the end of the Spring Term.[**]			
	16		**15**		**16**		**9**

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDU 780	3.0	EDUT 780, EDUP 780, or EDUL 780	3.0	EDUT 781, EDUP 781, or EDUL 781	3.0
EDUC 609	3.0	(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
(GR) MS Professional Elective	3.0				
	9		**6**		**6**

Total Credits 225

[*] COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3.0 credits are replaced with free electives.

[**] Accelerated Degree Level Conversion form (https://drexel.edu/graduatecollege/forms-policies/forms/) must be submitted to the Graduate College in Spring Term.

[***] BS/MS ELEM students who took EDUC 324 will take graduate level professional elective instead of EDUC 524

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education.* Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University).* Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University).* Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology).* Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Elementary Education (PK & Spec Ed) BS / Teaching, Learning & Curriculum MS

Major: Elementary Education, PK-4 and Special Education; Teaching, Learning and Curriculum
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 233.0
Co-op Options: One Co-op
Classification of Instructional Programs (CIP) code: 13.1202
Standard Occupational Classification (SOC) code: 25-2022

About the Program

The BS/MS in Elementary Education (PK-4 and Special Education) and Teaching, Learning and Curriculum offers a flexible, innovative curriculum with a unique emphasis on creative problem-solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Elementary/PK-4) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching, Learning and Curriculum (Advanced Track).

The BS/MS in Elementary Teacher Education and Teaching, Learning and Curriculum Advanced track prepares students academically and practically for careers in PK–12 teaching or other educational settings, including capabilities to:

- Demonstrate professional ethics and independent and creative academic best practices that exhibit outstanding leadership, organizational, cross cultural, inter-personal and advocacy skills including the ability to communicate effectively with internal and external groups.
- Understand the changing role of teachers in increasingly diverse societies
- Demonstrate a strong academic background in all subject areas that meet PDE requirements including literacy, language and STEM areas
- Demonstrate the ability to create and maintain a positive and democratic classroom climate for students
- Demonstrate a thorough understanding of child development in their ability to develop and implement learning opportunities that are unique to every child
- Develop creative academic leadership skills with a global perspective on current educational issues, knowledge of best pedagogical practices, tools to effectively integrate technology in curriculum, assessment and instruction, and a strong academic background in all subject areas that meet PDE content requirements.
- Develop competencies to become reflective practitioners who are lifelong learners, who base their practice on theory, research, and developmentally appropriate pedagogy by analyzing, implementing, and evaluating existing and new instructional strategies and practices in a variety of educational institutions/organizations.
- Demonstrate advanced teaching knowledge and skills well beyond that required for initial Pennsylvania certification
- Develop advanced skills to function in a variety of roles as instructors, instructional leaders or researchers in local, state, national and international organizations, foundations, associations, corporations and private educational institutions.
- Have in-depth knowledge of both public and private (non-profit and for-profit) institutions as well as small and large institutions.

Admission Requirements

Admission requirements are the same as the BS in Elementary Education. The BS/MS application must be submitted during sophomore year before 120.0 credits have been completed with a cumulative 3.0 GPA to gain acceptance into the BS/MS program. Continuation as a BS/MS student in Teaching, Learning and Curriculum (Advanced Track) requires maintaining a minimum term and cumulative 3.0 GPA.

Degree Requirements

General Education/Content Requirements

BIO 100	Applied Cells, Genetics & Physiology	3.0
or BIO 161	General Biology I	
BIO 101	Applied Biological Diversity, Ecology & Evolution	3.0
or BIO 162	General Biology II	
CHEM 111	General Chemistry I	4.0
CIVC 101	Introduction to Civic Engagement [*]	1.0
COM 111	Principles of Communication	3.0
COOP 101	Career Management and Professional Development [*]	1.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English (Literature) elective: Select course between ENGL 200 - ENGL 360		3.0
ENVS 260	Environmental Science and Society	3.0
HIST 275	History of Pennsylvania	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 151	Applied Physics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
PSY 330	Cognitive Psychology	3.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience [*]	1.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 120	Child Development I: Typical Development	3.0
EDUC 121	Child Development II: Atypical Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 236	Early Literacy I	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 306	Assessment of Young Children	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 314	Science Teaching Methods	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 326 [WI]	Language Arts Processes	3.0

EDUC 335	Engaging the Learner	3.0
EDUC 336	Early Literacy II	3.0
EDUC 338	Expressive Arts for PK-4	3.0
EDUC 355	Social Studies Teaching Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
EDUC 411	Family and Community Partnerships	3.0
MTED 417	Mathematics Methods and Content: Early Childhood	3.0
MTED 418	Mathematics Methods and Content	3.0
Special Education Core Courses		
EDEX 336	Special Education Law and Processes	3.0
EDEX 348	Emotional and Behavioral Support of Individuals with Disabilities	3.0
EDEX 349	High Incident Disabilities	3.0
EDEX 350	Teaching Individuals with Low Incident Disabilities	3.0
EDEX 352	Integrating Technology for Learning & Achievement	3.0
EDEX 355	Teaching Students with Autism Spectrum Disorders	3.0
EDEX 378	Special Education: Methods & Practices PK-12	3.0
EDEX 388	Implementing Academic Interventions in Inclusive Educational Environments	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDEX 414 [WI]	Special Education Student Teaching Seminar	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non-Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Organization Courses (Choose 2)		**6.0**
EDAM 705	School Law and Politics	
EDPO 620	Education Policy: Concepts, Issues, and Applications	
EDUC 804	Program Evaluation in Organizations	
MS in TLC Capstone Sequence		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Professional or Concentration Electives		**15.0**
Total Credits		**233.0**

*   COOP 101, CIVC 101 and UNIV T101 are not required for Education transfer students, instead these 3 credits are replaced with a 3 credit elective choice of ESTM 342 or EDEX 375.

Sample Plan of Study

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	BIO 100 or 161	3.0	EDEX 142	3.0	VACATION	
EDUC 106	1.0	CIVC 101	1.0	ENGL 103 or 113	3.0		
EDUC 120	3.0	COM 111	3.0	EDUC 108	1.0		
ENGL 101 or 111	3.0	EDUC 107	3.0	MATH 173 or 107	1.0		
MATH 171	3.0	EDUC 121	3.0	MUSC 130	3.0		
UNIV T101	1.0	ENGL 102 or 112	1.0	PSY 101	3.0		
		MATH 172	3.0		3.0		
	14		**17**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDEX 344	3.0	BIO 101 or 162	3.0	EDUC 236	3.0	EDEX 350	3.0
EDEX 349	3.0	COOP 101 *	1.0	EDUC 326	3.0	EDUC 306	3.0

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 205	1.0	EDEX 348	3.0	EDUC 365	3.0	EDUC 312	3.0
EDUC 308	3.0	EDEX 368	3.0	NFS 100	2.0	EDUC 324	3.0
English (Literature) elective: ENGL 200 - ENGL 360	3.0	EDUC 216	3.0	NFS 101	1.0	HIST 275	3.0
		EDUC 314	3.0	PSY 320	3.0		
		EDUC 316	3.0				
13		**19**		**15**		**15**	

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDEX 378	3.0	EDUC 335	3.0
MTED 417	3.0	EDUC 336	3.0	EDEX 388	3.0	EDUC 338	3.0
				EDUC 305	1.0	EDUC 355	3.0
				EDUC 411	3.0	ENVS 260	3.0
				PHYS 151	3.0	MTED 418	3.0
				PSY 330	3.0	(GR) MS Professional Elective	3.0
				(GR) MS Professional Elective	3.0		
3		**3**		**19**		**18**	

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDEX 336	3.0	EDEX 355	3.0	CHEM 111	4.0	EDAM 705	3.0
EDUC 405	1.0	EDEX 414	9.0	ECON 201	4.0	EDUC 530	3.0
EDUC 409	9.0	SOC 335	3.0	EDEX 352	3.0	EDUC 524	3.0
EDPO 620 or EDUC 804	3.0	EDLT 532	3.0	EDLT 325	3.0		
				EDAM 714	3.0		
				Student converts to Grad status at the end of the Spring term			
16		**18**		**17**		**9**	

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDU 780	3.0	EDUL 780, EDUT 780, or EDUP 780	3.0	EDUL 781, EDUT 780, or EDUP 780	3.0
EDUC 609	3.0	(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
(GR) MS Professional Elective	3.0				
9		**6**		**6**	

Total Credits 233

*   Co-op cycles may vary. Students are assigned a co-op cycle (fall/winter, spring/summer, summer-only) based on their co-op program (4-year, 5-year) and major.

COOP 101 registration is determined by the co-op cycle assigned and may be scheduled in a different term. Select students may be eligible to take COOP 001 in place of COOP 101.

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (Rtl); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-

Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education, English BS / Teaching, Learning and Curriculum MS

Major: Teacher Education, English; Teaching, Learning and Curriculum
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 226.0
Co-op Options: One Co-op
Classification of Instructional Programs (CIP) code: 13.1305
Standard Occupational Classification (SOC) code: 25-2021

About the Program

The Teacher Education, English BS and MS in Teaching, Learning and Curriculum offers a flexible, innovative curriculum with a unique emphasis on creative problem solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Secondary/English) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching, Learning and Curriculum (Advanced Track).

The BS/MS in Teacher Education and Teaching, Learning and Curriculum (Advanced Track) prepares students academically and practically for careers in PK–12 teaching or other educational settings, including capabilities to:

- Demonstrate professional ethics and independent and creative academic best practices that exhibit outstanding leadership, organizational, cross-cultural, interpersonal, and advocacy skills, including the ability to communicate effectively with internal and external groups
- Understand the changing role of teachers in increasingly diverse societies
- Demonstrate a strong academic background in all subject areas that meet PDE requirements, including literacy, language, and STEM areas
- Demonstrate the ability to create and maintain a positive and democratic classroom climate for students
- Demonstrate a thorough understanding of child development in their ability to develop and implement learning opportunities that are unique to every child
- Develop creative academic leadership skills with a global perspective on current educational issues, knowledge of best pedagogical practices, tools to effectively integrate technology in curriculum, assessment, and instruction, and a strong academic background in all subject areas that meet PDE content requirements
- Develop competencies to become reflective practitioners who are lifelong learners, who base their practice on theory, research, and developmentally appropriate pedagogy by analyzing, implementing, and evaluating existing and new instructional strategies and practices in a variety of educational institutions/organizations
- Demonstrate advanced teaching knowledge and skills well beyond that required for initial Pennsylvania certification
- Develop advanced skills to function in a variety of roles as instructors, instructional leaders, or researchers in local, state, national and international organizations, foundations, associations, corporations, and private educational institutions
- Have in-depth knowledge of both public and private (non-profit and for-profit) institutions as well as small and large institutions

Admission Requirements

Same as the BS in Teacher Education, the BSMS application must be submitted during sophomore year before 120.0 credits have been completed with a cumulative 3.0 GPA to gain acceptance into the program. Continuation as a BS/MS student in Teaching, Learning and Curriculum (Advanced Track) requires maintaining a minimum term and cumulative 3.0 GPA.

Degree Requirements

General Education Requirements

ARTH 101	History of Art I	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0

or ENGL 113	English Composition III	
ENVS 260	Environmental Science and Society	3.0
Select one American History course:		4.0
HIST 201	United States History to 1815	
HIST 202	United States History, 1815-1900	
HIST 203	United States History since 1900	
INFO 101	Introduction to Computing and Security Technology	3.0
LING 101	Introduction to Linguistics	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
MUSC 130	Introduction to Music	3.0
NFS 100	Nutrition, Foods, and Health	2.0
NFS 101	Introduction to Nutrition & Food	1.0
PHYS 131	Survey of the Universe	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 335	Sociology of Education	3.0
WRIT 225 [WI]	Creative Writing	3.0
WRIT 301 [WI]	Writing Poetry	3.0
UNIV T101	The Drexel Experience	1.0
Science Sequence		**6.0-8.0**
Select one of the following:		
CHEM 111	General Chemistry I	
CHEM 112	General Chemistry II	
or		
PHYS 170	Electricity and Motion	
PHYS 175	Light and Sound	
English Requirements (option to minor in English)		
ENGL 200 [WI]	Classical to Medieval Literature	3.0
ENGL 201	Renaissance to the Enlightenment	3.0
ENGL 204	Post-Colonial Literature	3.0
ENGL 205 [WI]	American Literature I	3.0
ENGL 206 [WI]	American Literature II	3.0
ENGL 211 [WI]	British Literature I	3.0
ENGL 212	British Literature II	3.0
ENGL 304	Young Adult Fiction	3.0
ENGL 325	Topics in World Literature	3.0
ENGL 335	Mythology	3.0
ENGL 355 [WI]	Women and Literature	3.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 358	English Teaching Methods	3.0

EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experiences		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non-Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Organization Courses (Choose 2)		**3.0**
EDPO 620	Education Policy: Concepts, Issues, and Applications	3.0
or EDAM 705	School Law and Politics	
or EDUC 804	Program Evaluation in Organizations	
MS in TLC Capstone Sequence		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Professional or Concentration Electives		**15.0**
Total Credits		**224.0-226.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
CHEM 111 or PHYS 170	3.0-4.0	ARTH 101	3.0	EDEX 142	3.0	VACATION	
EDUC 101	3.0	CHEM 112 or PHYS 175	3.0-4.0	EDUC 108	1.0		
EDUC 106	1.0	CIVC 101	1.0	EDUC 123	3.0		
ENGL 101 or 111	3.0	EDUC 107	1.0	ENGL 103 or 113	3.0		
MATH 171	3.0	EDUC 113	3.0	MATH 173	3.0		
PSY 101	3.0	ENGL 102 or 112	3.0	PHYS 131	3.0		
UNIV T101	1.0	MATH 172	3.0				
	17-18		**17-18**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101	1.0	EDUC 216	3.0	COM 230	3.0	ECON 201	4.0
EDEX 344	3.0	ENGL 201	3.0	EDEX 368	3.0	EDLT 325	3.0
ENGL 200	3.0	INFO 101	3.0	EDUC 308	3.0	EDUC 322	3.0
EDUC 205	1.0	LING 101	3.0	EDUC 305	3.0	HIST 201, 202, or 203	4.0
EDUC 223	3.0	NFS 100 & NFS 101	3.0	ENVS 260	3.0		
EDUC 365	3.0	WRIT 301	3.0				
WRIT 225	3.0						
	17		**18**		**13**		**14**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDUC 316	3.0	EDUC 312	3.0
EDUC 358	3.0	ENGL 211	3.0	ENGL 304	3.0	EDUC 324	3.0
				PSY 320	3.0	ENGL 212	3.0
				SOC 335	3.0	ENGL 335	3.0
				(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
	3		**3**		**15**		**15**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 409	9.0	EDUC 410	9.0	EDUC 405	1.0	EDAM 705	3.0
ENGL 204	3.0	ENGL 335	3.0	ENGL 205	3.0	EDUC 530	3.0
EDPO 620 or EDUC 804	3.0	EDLT 532	3.0	ENGL 206	3.0	EDUC 524	3.0
				ENGL 325	3.0		
				MUSC 130	3.0		
				EDAM 714	3.0		
				Student converts to Grad status at the end of the Spring term			
	15		**15**		**16**		**9**

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDU 780	3.0	EDUL 780, EDUT 780, or EDUP 780	3.0	EDUL 781, EDUT 780, or EDUP 780	3.0
EDUC 609	3.0	(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
(GR) MS Professional Elective	3.0				
	9		**6**		**6**

Total Credits 224-226

Education Faculty

Jennifer Adams, EdD *(Harvard University).* Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University).* Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University).* Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University).* Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University).* Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California).* Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head.* Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute.* Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University).* Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University).* Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies.* Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership.* Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program.* Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean.* Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy.* Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs.* Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research.* Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum.* Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (RtI); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education*. Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education, Secondary Mathematics BS / Teaching, Learning and Curriculum MS

Major: Teacher Education, Secondary Mathematics; Teaching, Learning and Curriculum
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 230.0
Co-op Options: One Co-op
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Program

The Teacher Education, Secondary Mathematics (7-12) BS and Teaching, Learning and Curriculum MS (Advanced Track) offers a flexible, innovative curriculum with a unique emphasis on creative problem-solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Secondary Mathematics 7-12) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).

The BS/MS in Secondary Mathematics Education and Teaching, Learning and Curriculum (Advanced Track) prepares students academically and practically for careers in PK–12 teaching or other educational settings, including capabilities to:

- Demonstrate professional ethics and independent and creative academic best practices that exhibit outstanding leadership, organizational, cross-cultural, interpersonal, and advocacy skills, including the ability to communicate effectively with internal and external groups
- Understand the changing role of teachers in increasingly diverse societies
- Demonstrate a strong academic background in all subject areas that meet PDE requirements, including literacy, language, and STEM areas
- Demonstrate the ability to create and maintain a positive and democratic classroom climate for students
- Demonstrate a thorough understanding of child development in their ability to develop and implement learning opportunities that are unique to every child
- Develop creative academic leadership skills with a global perspective on current educational issues, knowledge of best pedagogical practices, tools to effectively integrate technology in curriculum, assessment, and instruction, and a strong academic background in all subject areas that meet PDE content requirements
- Develop competencies to become reflective practitioners who are lifelong learners, who base their practice on theory, research, and developmentally appropriate pedagogy by analyzing, implementing, and evaluating existing and new instructional strategies and practices in a variety of educational institutions/organizations
- Demonstrate advanced teaching knowledge and skills well beyond that required for initial Pennsylvania certification
- Develop advanced skills to function in a variety of roles as instructors, instructional leaders, or researchers in local, state, national and international organizations, foundations, associations, corporations, and private educational institutions
- Have in-depth knowledge of both public and private (non-profit and for-profit) institutions as well as small and large institutions

Admission Requirements

Same as the BS in Teacher Education, the BSMS application must be submitted during sophomore year before 120.0 credits have been completed with a cumulative 3.0 GPA to gain acceptance into the program. Continuation as a BS/MS student in Teaching, Learning and Curriculum (Advanced Track) requires maintaining a minimum term and cumulative 3.0 GPA.

Degree Requirements

General Education Requirements

CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
CS 150	Computer Science Principles	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	
ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
English elective course between 200-329		3.0
HIST 289	History of Science: Enlightenment to Modernity	4.0
PHIL 251	Ethics	3.0
PSY 101	General Psychology I	3.0
PSY 320 [WI]	Educational Psychology	3.0
UNIV T101	The Drexel Experience	1.0
Mathematics Requirements		
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
MATH 123	Calculus III	4.0
MATH 200	Multivariate Calculus	4.0
MATH 201	Linear Algebra	4.0
MATH 205	Survey of Geometry	3.0
MATH 210	Differential Equations	4.0
MATH 220 [WI]	Introduction to Mathematical Reasoning	3.0
MATH 221	Discrete Mathematics	3.0
MATH 311	Probability and Statistics I	4.0
MATH 312	Probability and Statistics II	4.0
MATH 331	Abstract Algebra I	4.0
Science Requirements		
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BIO 109	Biological Diversity, Ecology & Evolution	3.0
BIO 110	Biological Diversity, Ecology and Evolution Laboratory	1.0

CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
ENVS 260	Environmental Science and Society	3.0
PHYS 101	Fundamentals of Physics I	4.0
PHYS 102	Fundamentals of Physics II	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDLT 326	Technology Applications for Learning	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
MTED 419	Teaching Secondary Mathematics	3.0
MTED 428	Cultural and Historical Significance of Mathematics	3.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0
EDLT 532	Designing Virtual Communities for Staff Development - Non-Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Organization Courses (Choose 2)		**3.0**
EDPO 620	Education Policy: Concepts, Issues, and Applications	3.0
or EDAM 705	School Law and Politics	
or EDUC 804	Program Evaluation in Organizations	
MS in TLC Capstone Sequence		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Professional or Concentration Electives		**15.0**
Total Credits		**230.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	CIVC 101	1.0	BIO 107	3.0	VACATION	
EDUC 106	1.0	EDUC 107	1.0	BIO 108	1.0		

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
ENGL 101 or 111	3.0	EDUC 113	3.0	EDEX 142	3.0		
MATH 121	4.0	ENGL 102 or 112	3.0	EDUC 108	1.0		
PSY 101	3.0	MATH 122	4.0	EDUC 123	3.0		
UNIV 101	1.0	PHIL 251	3.0	ENGL 103 or 113	3.0		
				MATH 123	4.0		
	15		**15**		**18**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101	1.0	ECON 201	4.0	CHEM 101	3.5	BIO 109	3.0
EDEX 344	3.0	EDUC 216	3.0	EDEX 368	3.0	BIO 110	1.0
EDUC 205	1.0	INFO 108 or CS 150	3.0	EDUC 305	1.0	CHEM 102	4.5
EDUC 223	3.0	MATH 201	4.0	EDUC 308	3.0	EDLT 325	3.0
EDUC 365	3.0			MATH 205	3.0	EDUC 322	3.0
HIST 289	4.0			MATH 210	4.0	MTED 428	3.0
MATH 200	4.0						
	19		**14**		**17.5**		**17.5**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
MTED 419	3.0			EDUC 316	3.0	EDUC 324	3.0
				MATH 220	3.0	MATH 221	3.0
				PHYS 101	4.0	PHYS 102	4.0
				(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
	3		**0**		**16**		**16**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 409	9.0	EDUC 410	9.0	EDUC 405	1.0	EDAM 705	3.0
MATH 331	4.0	MATH 311	4.0	ENGL 200 - ENGL 395	3.0	EDUC 524	3.0
EDPO 620, EDAM 705, or EDUC 804	3.0	EDLT 532	3.0	ENVS 260	3.0	EDUC 530	3.0
				MATH 312	4.0		
				PSY 320	3.0		
				EDAM 714	3.0		
				Student converts to Grad status at the end of the Spring term			
	16		**16**		**17**		**9**

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDU 780	3.0	EDUL 780, EDUT 780, or EDUP 780	3.0	EDUL 781, EDUT 780, or EDUP 780	3.0
EDUC 609	3.0	(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
(GR) MS Professional Elective	3.0				
	9		**6**		**6**

Total Credits 230

Education Faculty

Jennifer Adams, EdD *(Harvard University)*. Associate Professor. Comparative and international education; Poverty and education; Child welfare; Educational policy.

Ayana Allen, PhD *(Texas A&M University)*. Associate Professor. Urban education; Identity construction in school contexts; Urban school transformation.

Kristen Betts, EdD *(George Washington University)*. Clinical Professor. Higher education administration and governance, online blended education, instructional design and educational technology, program assessment and evaluation.

Eric Brewe, PhD *(Arizona State University)*. Associate Professor. Physics Education Research, introductory course reform, network analysis in learning, neuromechanisms of learning.

Stephanie Smith Budhai, PhD *(Drexel University)*. Associate Clinical Professor. Teacher and higher education, culturally responsive teaching, equity and social justice, online learning, community engagement and service-learning, family involvement and partnerships, and learning technologies.

José Luis Chávez, EdD *(University of Southern California)*. Clinical Professor. Higher education leadership and administration.

Rebecca Clothey, PhD *(University of Pittsburgh) Associate Department Head*. Associate Professor. Comparative and international education, education of ethnic and linguistic minorities, sociology of education.

James Connell, PhD *(Louisiana State University) Founding Clinical Core Director and Research Fellow, A.J. Drexel Autism Institute*. Associate Professor. Identifying the variables that influence adult behavior change in community settings; autism intervention; widespread dissemination of evidence-based interventions in school and community settings.

Kareem Edouard, PhD *(Stanford University)*. Assistant Professor. Educational technology; internet-based STEM learning; equity and inclusion in STEM education

Salvatore V. Falletta, EdD *(North Carolina State University)*. Clinical Professor. Human Resource intelligence (i.e., HR research and analytics practices); HRD assessment, measurement, and evaluation models and taxonomies; organizational diagnostic models; web-based employee and organizational survey methods, and computational modeling.

Aroutis N. Foster, PhD *(Michigan State University) Associate Dean for Academic Affairs and Graduate Studies*. Professor. Educational psychology and educational technology, especially the following: Motivation; Technological Pedagogical Content Knowledge (TPACK); Immersive Interactive Digital Environments (simulation, games, virtual realities.

Rajashi Ghosh, PhD *(University of Louisville, Kentucky) Department Chair for Policy, Organization & Leadership*. Associate Professor. Mentoring and leader development, workplace Incivility, workplace learning and development.

John M. Gould, PhD *(University of Pittsburgh) Harrisburg EdD Educational Leadership & Change Program*. Clinical Professor. Change leadership, curriculum re-design, the impact of technology on learning.

Dominic F. Gullo, PhD *(Indiana University)*. Professor. Studying the relative and long-range effects of early schooling experiences in prekindergarten and kindergarten on children's achievement and social adaptation to school routine.

H. Bernard Hall, PhD *(Temple University)*. Assistant Professor. Hip-hop Pedagogy, English Education, Urban Teacher Education.

Penny Hammrich, PhD *(University of Minnesota) Dean*. Distinguished University Professor. Urban education; science education; genetics; gender equity; science knowledge for conceptual teaching; sport science.

Paul Harrington, PhD *(University of Massachusetts, Boston) Director, Center for Labor Markets and Policy*. Professor. Teen and young adult job access; economic outlook, college labor market; workforce development, planning, and development; vocational rehabilitation and job market transition.

Michael J. Haslip, PhD *(Old Dominion University)*. Assistant Professor. Early childhood education, social and emotional learning, child guidance strategies, effects of public pre-school attendance.

Deanna Hill, JD, PhD *(University of Pittsburgh)*. Associate Clinical Professor. Higher education, international education, education law, education policy

Erin Horvat, PhD *(University of California, Los Angeles) Senior Vice Provost for Faculty Affairs*. Professor. Urban education, access and equity, high school dropout, parent involvement/family involvement, community engagement in research.

Jennifer Katz-Buonincontro, PhD *(University of Oregon) Associate Dean of Research*. Associate Professor. Educational administration, leadership development, survey & instrument design.

Larry Keiser, PhD *(Drexel University)*. Assistant Clinical Professor. Education and corporate/business leaders' creativity and entrepreneurial mindsets; creative school/work environments; neuroscience of creativity; everyday creativity for teachers and educators.

Kristy Kelly, PhD *(University of Wisconsin, Madison)*. Associate Clinical Professor. Sociology of gender and development; anthropology of policy; comparative and international education; qualitative research methods; Vietnam and Southeast Asia.

Cameron Kiosoglous, PhD *(Virginia Tech University) Program Director*. Assistant Clinical Professor. Coached on the USRowing National Team staff since 2002, including the 2004, 2008, 2012, and 2016 Olympic Games; coaching development; measuring coaching quality; self-insight and reflective practices; coaching leadership; conference presenter; published author.

Valerie Klein, PhD *(Amherst College)*. Associate Clinical Professor. Mathematics learning and teaching; teacher's use of formative assessment in mathematics; creating opportunities for rich problem solving in the classroom; examining teachers growth and change; qualitative research methods.

Peggy Kong, PhD *(Harvard University)*. Associate Clinical Professor. Comparative and international education, equity in education, family and community, Chinese education and society, sociology of education

Michael G. Kozak, Ed.D. *(Rowan University)*. Assistant Clinical Professor. Leadership, STEAM, online and blended learning environments, systems thinking, experiential learning, K-12 education, and facilitating change

Amanda Lannie, PhD *(Syracuse University)*. Assistant Clinical Professor. Applied behavior analysis and special education; School-based consultation; system-wide interventions as a mechanism for delivery supports to all students; Designing effective and efficient interventions for students with emotional/behavioral disorders.

Vera Lee, EdD *(University of Pennsylvania) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Practitioner Research in online courses to explore inservice/preservice teachers' emerging understandings about issues of diversity; the development of information/digital literacies of urban youth; English language learners.

Bruce Levine, JD *(New York University)*. Associate Clinical Professor. Educational policy, school law, public-private partnerships, intersection of business and education.

Kristine Lewis-Grant, PhD *(Temple University)*. Clinical Professor. Experiences of students of African descent at predominantly white colleges and universities, college access and college student development, youth civic engagement in urban school reform, qualitative research and evaluation.

William Lynch, PhD *(University of Maryland)*. Professor. Curriculum and educational leadership, educational technology, distance learning policy development, higher and adult education.

Constance Lyttle, PhD, JD *(University of Pittsburgh, Duquesne University)*. Clinical Professor. Legal rights of gifted and talented children and children with disabilities; inclusive education of exceptional children; special education mediation; special education IEP/IFSP facilitation; resolution session facilitation

Joy Phillips, PhD *(The University of Texas at Austin)*. Associate Clinical Professor. Visionary leadership in theory and practice, school reform as innovative problem-setting, thinking qualitatively about school reform. thinking about school reform by drawing, Educational Leadership Program Assessment.

Kathleen Provinzano, PhD *(Marywood University)*. Assistant Professor. Educational administration.

Harriette Rasmussen, EdD *(Fielding Graduate University)*. Assistant Clinical Professor. Educational leadership and change.

Lori Severino, EdD *(Neumann University)*. Assistant Professor. Special education, differentiated instruction, reading, Wilson language, multi-sensory instruction, reading comprehension, assessment, adolescent literacy.

Jason Silverman, PhD *(Vanderbilt University)*. Professor. Teaching and learning of advanced mathematical ideas (algebra and calculus); improving teachers' ability to orchestrate and sustain inquiry-based and discussion-based instruction; technology in mathematics education.

Janet Sloand, EdD *(Duquesne University) Department Chair for Teaching, Learning & Curriculum*. Associate Clinical Professor. Special Education Leadership, Trauma-informed care, Parent engagement in special education service delivery.

Toni A. Sondergeld, PhD *(University of Toledo)*. Associate Professor. Cognitive and affective assessment development; program/grant evaluation; high stakes testing measurement; STEM education; urban education

Bridget Sweeney Blakely, PhD *(Temple University)*. Assistant Clinical Professor. Consultation; Positive Behavior Interventions and Supports (PBIS); Response to Intervention (RtI); Systems-level change; performance feedback

Mary Jean Tecce DeCarlo, EdD *(University of Pennsylvania)*. Associate Clinical Professor. Early literacy development, learning differences, knowledge construction, urban education.

Sarah P. Ulrich, EdD *(Saint Joseph's University) Associate Dean of Teacher Education and Undergraduate Affairs*. Clinical Professor. Cross-cultural, language and academic development, school reform, teacher preparation, teacher retention, teacher residencies in urban contexts.

Sheila Vaidya, PhD *(Temple University)*. Professor. Educational psychology, school psychology, research design.

Christina Vorndran, PhD *(Louisiana State University) Program Director, Applied Behavior Analysis and Special Education*. Clinical Professor. Designing effective and efficient community-based interventions, Severe behavior disorders, Functional behavior assessment

Christopher G. Wright, PhD *(Tufts University)*. Assistant Professor. Engineering and science education, Urban education, elementary teacher education.

Emeritus Faculty

Mary Jo Grdina, PhD *(Case Western Reserve University)*. Clinical Professor. Undergraduate studies, science education, curriculum design.

Joyce Pittman, PhD *(Iowa State University of Science and Technology)*. Clinical Professor. Curriculum and instruction K-16; teaching English as a foreign language (TEFL); instructional design business education and administration; industrial and career technology; oral and written communication; research methodology; instructional and assistive technology assessment; online learning pedagogy

Fredricka K. Reisman, PhD *(Syracuse University) School of Education, Founder, Drexel School of Education.* Professor Emerita. Director, Freddie Reisman Center for Translational Research in Creativity and Motivation, Creator and Former Director-Creativity and Innovation Programs, Co-Director-Drexel/Torrance Center for Creativity and Innovation, Drexel University Named Recognition- Freddie Reisman Faculty Scholarly and Creative Activity Awards

Teacher Education, Secondary Social Studies BS / Teaching, Learning and Curriculum MS

Major: Teacher Education, Secondary Social Studies; Teaching, Learning and Curriculum
Degree Awarded: Bachelor of Science (BS) and Master of Science (MS)
Calendar Type: Quarter
Total Credit Hours: 232.0
Co-op Options: One Co-op
Classification of Instructional Programs (CIP) code: 13.1205
Standard Occupational Classification (SOC) code: 25-2031

About the Program

The BS/MS in Teacher Education with Secondary Education and MS in Teaching Learning and Curriculum offers a flexible, innovative curriculum with a unique emphasis on creative problem-solving and the application of the latest technologies to learning. This accelerated degree program allows candidates to pursue a BS in Education (Secondary/Social Studies) with Pennsylvania initial state teacher certification and continue for a fifth graduate year to complete the MS in Teaching Learning and Curriculum (Advanced Track).

The BS/MS in Teacher Education and Teaching, Learning and Curriculum (Advanced Track) prepares students academically and practically for careers in PK–12 teaching or other educational settings, including capabilities to:

- Demonstrate professional ethics and independent and creative academic best practices that exhibit outstanding leadership, organizational, cross-cultural, inter-personal, and advocacy skills, including the ability to communicate effectively with internal and external groups
- Understand the changing role of teachers in increasingly diverse societies
- Demonstrate a strong academic background in all subject areas that meet PDE requirements, including literacy, language, and STEM areas
- Demonstrate the ability to create and maintain a positive and democratic classroom climate for students
- Demonstrate a thorough understanding of child development in their ability to develop and implement learning opportunities that are unique to every child
- Develop creative academic leadership skills with a global perspective on current educational issues, knowledge of best pedagogical practices, tools to effectively integrate technology in curriculum, assessment and instruction, and a strong academic background in all subject areas that meet PDE content requirements
- Develop competencies to become reflective practitioners who are lifelong learners, who base their practice on theory, research, and developmentally appropriate pedagogy by analyzing, implementing, and evaluating existing and new instructional strategies and practices in a variety of educational institutions/organizations
- Demonstrate advanced teaching knowledge and skills well beyond that required for initial Pennsylvania certification
- Develop advanced skills to function in a variety of roles as instructors, instructional leaders, or researchers in local, state, national and international organizations, foundations, associations, corporations, and private educational institutions
- Have in-depth knowledge of both public and private (non-profit and for-profit) institutions as well as small and large institutions

Admission Requirements

The admission requirements are the same as the BS in Teacher Education. The BS/MS application must be submitted during sophomore year before 120.0 credits have been completed with a cumulative 3.0 GPA to gain acceptance into the BS/MS program. Continuation as a BS/MS student in Teaching, Learning and Curriculum (Advanced Track) requires maintaining a minimum term and cumulative 3.0 GPA.

Degree Requirements

General Education Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
ANTH 110	Human Past: Anthropology and Prehistoric Archeology	3.0
CIVC 101	Introduction to Civic Engagement	1.0
COOP 101	Career Management and Professional Development	1.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
or ENGL 111	English Composition I	

ENGL 102	Composition and Rhetoric II: Advanced Research and Evidence-Based Writing	3.0
or ENGL 112	English Composition II	
ENGL 103	Composition and Rhetoric III: Themes and Genres	3.0
or ENGL 113	English Composition III	
ENGL 205 [WI]	American Literature I	3.0
MATH 171	Introduction to Analysis A	3.0
MATH 172	Introduction to Analysis B	3.0
MATH 173	Introduction to Analysis C	3.0
or MATH 107	Probability and Statistics for Liberal Arts	
PSY 101	General Psychology I	3.0
PSY 150	Introduction to Social Psychology	3.0
PSY 320 [WI]	Educational Psychology	3.0
SOC 101	Introduction to Sociology	3.0
SOC 210	Race, Ethnicity and Social Inequality	4.0
SOC 335	Sociology of Education	3.0
UNIV T101	The Drexel Experience	1.0
Social Studies Content Requirments:		
Select two:		8.0
HIST 161	Themes in World Civilization I	
HIST 162	Themes in World Civilization II	
HIST 163	Themes in World Civilization III	
HIST 201	United States History to 1815	4.0
HIST 202	United States History, 1815-1900	4.0
HIST 203	United States History since 1900	4.0
HIST 212	Themes in African-American History	4.0
HIST 214	United States Civil Rights Movement	4.0
HIST 275	History of Pennsylvania	3.0
PSCI 110	American Government	4.0
PSCI 140	Comparative Politics I	4.0
PSCI 150	International Politics	4.0
PSCI 220	Constitutional Law I	4.0
PSCI 240	Comparative Politics II	4.0
PSCI 375	Politics of Immigration	4.0
Pedagogy Requirements		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
EDUC 106	First Year Seminar: A Case of Schools and Cities	1.0
EDUC 107	First Year Seminar: Exploring Pedagogies	1.0
EDUC 108	First Year Seminar: Designing Learning Spaces	1.0
EDUC 112	Integrative Instruction: Focus on World Geography	3.0
EDUC 113	Organizational Structure of Secondary Schools	3.0
EDUC 123	Adolescent Development	3.0
EDUC 205	Sophomore Pedagogy Seminar	1.0
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 223	Teaching the Middle School Child	3.0
EDUC 305 [WI]	Junior Pedagogy Seminar	1.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 312	Educational Policy, Law & Advocacy	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 322	Evaluation of Instruction	3.0
EDUC 324	Current Research in Curriculum & Instruction	3.0
EDUC 356	Secondary Social Studies Methods	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
EDUC 405	Senior Pedagogy Seminar	1.0
Student Teaching Experience		
EDUC 409 [WI]	Student Teaching Seminar I	9.0
EDUC 410 [WI]	Student Teaching	9.0
MS in TLC Core		
EDAM 714	Instructional and Curriculum Leadership	3.0

EDLT 532	Designing Virtual Communities for Staff Development - Non-Field Experience	3.0
EDUC 524	Current Research in Curriculum & Instruction	3.0
EDUC 530	Advanced Techniques in Instruction & Assessment	3.0
EDUC 609	Language & Culture in Education	3.0
Policy, Law & Organization Courses (Choose 2)		**6.0**
EDAM 705	School Law and Politics	
EDPO 620	Education Policy: Concepts, Issues, and Applications	
EDUC 804	Program Evaluation in Organizations	
MS in TLC Capstone Sequence		
EDU 780	Capstone Research	3.0
EDUL 780	Lesson Study Capstone Course I	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
EDUL 781	Lesson Study Capstone Course II	3.0
or EDUT 780	Thesis Capstone Course I	
or EDUP 780	Practitioner Capstone Course I	
Professional or Concentration Electives		**15.0**
Total Credits		**232.0**

Sample Plan of Study

4 year, 1 co-op

First Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 101	3.0	ANTH 101	3.0	ANTH 110	3.0	VACATION	
EDUC 106	1.0	CIVC 101	1.0	EDEX 142	3.0		
ENGL 101 or 111	3.0	EDUC 107	1.0	EDUC 108	1.0		
MATH 171	3.0	EDUC 113	3.0	EDUC 123	3.0		
HIST 161	4.0	ENGL 102 or 112	3.0	ENGL 103 or 113	3.0		
PSY 101	3.0	HIST 162 or 163	4.0	MATH 173	3.0		
UNIV T101	1.0	MATH 172	3.0				
	18		**18**		**16**		**0**

Second Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP 101	1.0	EDUC 216	3.0	EDEX 368	3.0	EDLT 325	3.0
EDEX 344	3.0	HIST 201	4.0	EDUC 305	1.0	EDUC 322	3.0
EDUC 112	3.0	HIST 214	4.0	EDUC 308	3.0	HIST 275	3.0
EDUC 205	1.0	PSCI 110	4.0	HIST 202	4.0	PSCI 375	4.0
EDUC 223	3.0	PSY 150	3.0	HIST 203	3.0	SOC 101	3.0
EDUC 365	3.0			PSCI 140	4.0		
	14		**18**		**19**		**16**

Third Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
COOP EXPERIENCE		COOP EXPERIENCE		EDLT 326	3.0	EDUC 312	3.0
EDUC 356	3.0			EDUC 316	3.0	EDUC 324	3.0
				PSY 320	3.0	PSCI 150	4.0
				SOC 335	3.0	SOC 210	4.0
				(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
	3		**0**		**15**		**17**

Fourth Year

Fall	Credits	Winter	Credits	Spring	Credits	Summer	Credits
EDUC 409	9.0	ECON 201	4.0	ECON 202	4.0	EDAM 705	3.0
PSCI 220	4.0	EDUC 410	9.0	EDUC 405	1.0	EDUC 530	3.0
EDPO 620 or EDUC 804	3.0	EDLT 532	3.0	HIST 212	4.0	EDUC 524	3.0
				PSCI 240	4.0		
				EDAM 714	3.0		
				Student converts to Grad status at the end of the Spring term			
	16		**16**		**16**		**9**

Fifth Year

Fall	Credits	Winter	Credits	Spring	Credits
EDU 780	3.0	EDUL 780, EDUT 780, or EDUP 780	3.0	EDUL 781	3.0
EDUC 609	3.0	(GR) MS Professional Elective	3.0	(GR) MS Professional Elective	3.0
(GR) MS Professional Elective	3.0				
	9		**6**		**6**

Total Credits 232

Minor in Design of Learning Technologies

Note: Effective Fall 2021, students are no longer being accepted into the Minor in Design of Learning Technologies program.

About the Minor

This minor offers a blended campus-based undergraduate-level, education minor in Design of Learning Technologies (DLT) with a thematic focus in design and technology. The minor in DLT is designed to cultivate the knowledge and skills that students across multiple disciplines will need to design environments to support learning and teaching, typically new and emerging technologies.

The minor will provide an option for students to gain a richer understanding of theories of learning for a wide range of educational contexts (e.g., classrooms, museums, after-school, summer camps, etc.), audiences (e.g., teachers, students, corporations, children, adults, etc.), and learning environments (e.g. digital, non-digital, virtual, face-to-face, etc.). The minor program offers 24.0 core credits of instruction.

Admission Requirements

Student must have a 2.5 cumulative GPA or better.

Program Requirements

EDLT 103	Foundation in Education III: Learning Sciences	3.0
EDLT 238	New Media Literacies	3.0
EDLT 301	Learning, Culture & Technology Workshop III	3.0
EDLT 339	Future Pedagogies	3.0
EDLT 353	Play and Learning in Participatory Cultures	3.0
EDLT 354	Learning In and Out of Schools	3.0
INFO 110	Introduction to Human-Computer Interaction	3.0
INFO 310	Human-Centered Design Process & Methods	3.0
Total Credits		**24.0**

DragonsTeach Certification Minor

About the Minor

This minor can be coupled with a variety of STEM majors. It will provide an opportunity to explore STEM education and to develop core knowledge and practices in secondary STEM education. Successful STEM Education minor candidates will be prepared to apply for the PA Instructional I teaching certification as a secondary teacher (grades 7-12) in one or more STEM content areas. This minor includes coursework that meets the requirements to be recommended for teacher certification in PA.

Admission Requirements

Must be a STEM major.

Program Requirements

Introductory Courses		
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
STEM Education Core Courses		
ESTM 301	Knowing and Learning in Mathematics and Science	3.0
ESTM 302	Classroom Interactions	3.0
ESTM 350	Project-Based Instruction	4.0
History of Science or Mathematics Course [*]		
ESTM 362	Perspectives in Science and Mathematics Education	3.0
or MTED 428	Cultural and Historical Significance of Mathematics	
or HIST 285	Technology in Historical Perspective	
STEM Teaching Methods Course		
MTED 419	Teaching Secondary Mathematics	3.0
or EDUC 315	Secondary Science Teaching Methods	
or ESTM 335	Teaching Secondary Computer Science	
STEM Research Methods [**]		
ESTM 364	Methods of Research and Inquiry in Science and Mathematics	3.0
Special Education and English Language Learner Courses		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0

EDUC 365	Foundations in Instructing English Language Learners	3.0
Student Teaching		
ESTM 409	Student Teaching Seminar	3.0
Total Credits		**34.0**

*   Specific course selected in consultation with a School of Education academic advisor and is dependent on student's aspirations for teacher certification.

**   A Research/Methods/Design course from a student's home department may be substituted in consultation with a School of Education academic advisor.

NOTE: In addition, students specifically pursuing secondary level Mathematics PA Teacher Certification must also complete ESTM T380: Functions and Modeling.

DragonsTeach Math Certification Minor

About the Minor

This minor can be coupled with a variety of STEM majors. It will provide an opportunity to explore STEM education and to develop core knowledge and practices in secondary STEM education. Successful STEM Education minor candidates will be prepared to apply for the PA Instructional I teaching certification as a secondary teacher (grades 7-12) in one or more STEM content areas. This minor includes coursework that meets the requirements to be recommended for teacher certification in PA.

Admission Requirements

Must be a STEM major.

Program Requirements

Introductory Courses		
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
STEM Education Core Courses		
ESTM 301	Knowing and Learning in Mathematics and Science	3.0
ESTM 302	Classroom Interactions	3.0
ESTM 350	Project-Based Instruction	4.0
History of Science or Mathematics Course [*]		
ESTM 362	Perspectives in Science and Mathematics Education	3.0
or MTED 428	Cultural and Historical Significance of Mathematics	
or HIST 285	Technology in Historical Perspective	
STEM Teaching Methods Course		
MTED 419	Teaching Secondary Mathematics	3.0
or EDUC 315	Secondary Science Teaching Methods	
or ESTM 335	Teaching Secondary Computer Science	
STEM Research Methods [**]		
ESTM 364	Methods of Research and Inquiry in Science and Mathematics	3.0
Special Education and English Language Learner Courses		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Student Teaching		
ESTM 409	Student Teaching Seminar	3.0
Math Certification Course		
ESTM T380	Special topics in ESTM	3.0
Total Credits		**37.0**

*   Specific course selected in consultation with a School of Education academic advisor and is dependent on student's aspirations for teacher certification.

**   A Research/Methods/Design course from a student's home department may be substituted in consultation with a School of Education academic advisor.

NOTE: In addition, students specifically pursuing secondary level Mathematics PA Teacher Certification must also complete ESTM T380

DragonsTeach Middle Years Minor

About the Minor

This minor can be coupled with a variety of majors. It will provide an opportunity to explore middle level education and to develop core knowledge and practices in education. Successful DTMY Education minor candidates may choose to build upon the requirements of this minor to further their education and complete PA Instructional I teacher certification in grades 4-8 through the School of Education's other minor, DragonsTeach Middle Years Certification Minor (p. 122).

Program Requirements

Introductory Courses		
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
Special Education and English Language Learner Courses		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Pedagogy Courses		
EDUC 223	Teaching the Middle School Child	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 316	Teaching in Urban Contexts	3.0
Total Credits		**24.0**

DragonsTeach Middle Years Certification Minor

About the Minor

This minor can be coupled with a variety of majors and fulfils the coursework that leads to a PA Instructional I teaching certification in grades 4-8. It will provide the opportunity to learn about teaching middle level grades and to develop core knowledge and practices in education. Candidates will select to focus on certification in two middle level content areas. This minor includes coursework that meets the requirements to be recommended for teacher certification in PA.

Program Requirements

Introductory Course		
ESTM 201	DragonsTeach: Step 1	1.5
Special Education and English Language Learner Courses		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 344	Inclusive Practices	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDUC 365	Foundations in Instructing English Language Learners	3.0
Pedagogy Courses		
EDUC 223	Teaching the Middle School Child	3.0
EDUC 308	Creating a Positive Classroom Climate	3.0
EDUC 316	Teaching in Urban Contexts	3.0
EDUC 328	Language Arts Processes 4-8	3.0
Pre-residency		
EDUC 360	English/Language Arts Teaching Methods for the Middle Years	1.5
EDUC 361	Middle Years Science Methods	1.5
EDUC 362	Middle Years Social Studies Methods	1.5
MTED 363	Middle Years Mathematics Methods (4-8)	1.5
Student Teaching		
ESTM 409	Student Teaching Seminar (repeat 3-credit course twice)	6.0
Total Credits		**37.5**

Minor in Education

About the Minor

The minor in Education provides a structured academic opportunity for students who wish to add a fundamental understanding of the field of education as well as practical knowledge in the art and science of teaching and learning to their undergraduate experience.

Designed for students with a strong interest in education and training, the minor will not necessarily lead to the student being recommended for a state teaching certificate; however, should a student decide to also pursue a teaching certificate as a component of their major—or in post-baccalaureate work — the courses required for the minor are applicable to Pennsylvania state certification.

The following courses (EDEX 368 [WI] , EDUC 123, and EDUC 223) require stage 1-2 field experiences. Students must submit current clearances and the appropriate field placement application prior to registering for those courses. For more information regarding stage 1-2 field placements and obtaining clearances, please click on the Field Placement Office website (https://drexel.edu/soe/resources/student-teaching/).

Program Requirements

Required Courses

EDEX 142	Special Education Foundations: Referral and Assessment	3.0
EDEX 368 [WI]	Literacy and Content Skill Development PK-12	3.0
EDLT 325	Design for Learning with Digital Media	3.0
or EDUC 308	Creating a Positive Classroom Climate	
EDUC 101	Foundations in Education I: A Historical and Philosophical Perspective	3.0
or EDUC 316	Teaching in Urban Contexts	
EDUC 120	Child Development I: Typical Development	3.0
or EDUC 123	Adolescent Development	
or EDUC 223	Teaching the Middle School Child	
EDUC 216	Diversity and Today's Teacher	3.0
EDUC 322	Evaluation of Instruction	3.0
or EDUC 306	Assessment of Young Children	
EDUC 324	Current Research in Curriculum & Instruction	3.0
or EDUC 365	Foundations in Instructing English Language Learners	
Total Credits		**24.0**

Minor in Sport Coaching Leadership

About the Minor

The minor in Sport Coaching Leadership (SCL), open to all undergraduate students across the University, provides the foundation for the effective coaching and managing of athletes at various levels. The minor is complementary to a variety of degree programs.

Upon completion of the minor, students will have developed the ability to communicate and motivate athletes, enhance the social and emotional growth of athletes, develop sound physical training programs, use sport skills effectively, inform athletes about the principles of good nutrition, reduce injuries by managing roles better, effectively deal with equipment, facilities, scheduling and team logistics and understand the administrative facets of coaching.

Program Requirements

Required Core Courses

SCL 101	Principles of Coaching	3.0
SCL 102	Principles of Coaching II	3.0
SCL 203	Sports Conditioning	3.0
SCL 210	Prevention and Care of Athletic Injuries	3.0
SCL 495	Coaching Practicum I	3.0
or SCL 496	Coaching Practicum II	
SCL Minor Electives		
Select 9 credits from the following		9.0
PSY 245 [WI]	Sports Psychology	
SCL 201	Sport-Based Youth Development	
SCL 280	Kinesiology	
SCL 314	Sport Performance and Energy Systems	
SCL 315	Athletic Recruiting	
SCL 325	Athlete Leadership Development	
SCL 345	Evaluating Athletes and Teams	
SCL 401	Professional Coaching Portfolio	

SCL 419	Global Coaching Seminar	
Total Credits		**24.0**

Minor in STEM Education

About the Minor

This minor can be coupled with a variety of STEM majors. It will provide an opportunity to explore STEM education and to develop core knowledge and practices in secondary STEM education. Successful STEM Education minor candidates may build upon the minor's coursework which leads to recommendation for PA teaching certification as a secondary teacher (grades 7-12) in one or more STEM content areas. Additional coursework for teacher certification includes student teaching and required Special Education and English Language Learner courses (an additional 2 courses + student teaching).

Program Requirements

Introductory Courses		
ESTM 201	DragonsTeach: Step 1	1.5
ESTM 210	DragonsTeach: Step 2	1.5
STEM Education Core Courses		
ESTM 301	Knowing and Learning in Mathematics and Science	3.0
ESTM 302	Classroom Interactions	3.0
ESTM 350	Project-Based Instruction	4.0
History of Science or Mathematics Course [*]		
ESTM 362	Perspectives in Science and Mathematics Education	3.0
or MTED 428	Cultural and Historical Significance of Mathematics	
or HIST 285	Technology in Historical Perspective	
STEM Teaching Methods Course		
MTED 419	Teaching Secondary Mathematics	3.0
or EDUC 315	Secondary Science Teaching Methods	
or ESTM 335	Teaching Secondary Computer Science	
STEM Research Methods [**]		
ESTM 364	Methods of Research and Inquiry in Science and Mathematics	3.0
Special Education or English Language Learner Elective		
EDEX 142	Special Education Foundations: Referral and Assessment	3.0
or EDEX 344	Inclusive Practices	
or EDUC 365	Foundations in Instructing English Language Learners	
Total Credits		**25.0**

[*]   Specific course selected in consultation with a School of Education academic advisor and is dependent on student's aspirations for teacher certification.

[**]   A Research/Methods/Design course from a student's home department may be substituted in consultation with a School of Education academic advisor.

NOTE: If pursuing PA teaching certification requirements beyond the STEM Minor, all three Special Education or English Language Learner Elective courses listed above must be taken as well as ESTM 410. In addition, students specifically pursuing secondary level Mathematics PA Teacher Certification must also complete ESTM T380: Functions and Modeling.

Certificate in Creativity and Innovation

Certificate Level: Undergraduate
Admission Requirements: High school diploma
Certificate Type: Certificate
Number of Credits to Completion: 18.0
Instructional Delivery: Online
Calendar Type: Quarter
Expected Time to Completion: 2 years
Financial Aid Eligibility: Not aid eligible
Classification of Instructional Program (CIP) Code: 30.9999
Standard Occupational Classification (SOC) Code: 11-9199

About the Program

The undergraduate certificate in Creativity & Innovation (C&I) provides the fundamentals of creative problem-solving content and competencies indicative of creative leaders. The certificate in C&I provides students with the content knowledge of what creativity is and is not, and the tools and skills to identify and enhance their creative strengths and abilities, while fostering their ability to apply creativity in their personal lives and in a leadership role within the workplace.

Students have the option of completing this undergraduate certificate as a standalone professional development credential or as a concentration within their baccalaureate degree.

Program Requirements

Requirements		
Core Courses		
CRTV 301	Foundations in Creativity	3.0
CRTV 302	Tools and Techniques in Creativity	3.0
CRTV 303	Creativity in the Workplace	3.0
Electives		
Select three of the following:		9.0
EDLT 101	Learning, Culture & Technology Workshop I	
EDLT 238	New Media Literacies	
EDLT 353	Play and Learning in Participatory Cultures	
PRST 450	Creative Leadership for Professionals	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
Total Credits		**18.0**

Index