



NEW JERSEY

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QuickTakes!

William Paterson University's Master of Education in Curriculum and Learning Gathers STEAM

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This fall, William Paterson University is launching a revamped version of its Master of Education in Curriculum and Learning program, now offering an innovative concentration in "STEAM," which adds the arts to K-8 science, technology, engineering, and math (STEM) instruction. William Paterson University is the first and only institution in New Jersey, and one of only a few universities nationwide, to offer STEAM education at the graduate level.

"Research shows that arts integration in elementary and middle school STEM coursework can bolster student engagement and learning," says Amy Ginsberg, dean of William Paterson University's College of Education. "Adding the arts makes STEM more accessible to more K-8 students – particularly those that sway heavier to such interests and skills or those who have previously faced inequities in STEM education due to socioeconomic, racial or linguistic factors, among others."

The new concentration is geared toward previously certified K-8 teachers, aiming to enhance their competence and confidence to adequately teach and guide STEAM subjects for all learners, according to Professor Heejung An, director of the Master of Education in curriculum and learning. The 33-credit program, which can be completed in 24 months, employs project-based learning, an inquiry-based research study, and leadership development courses so that candidates are prepared to meet the evolving needs of schools and districts in positions as STEAM teachers or coordinators, instructional leaders, or curriculum developers.

"We are offering an entire concentration at the master's level, which is very exciting," says STEAM concentration coordinator Sandra Alon, associate professor of educational leadership and professional studies. "We have many experienced teachers coming to us, going back to school, eager to enroll in this program."

The focus is an interdisciplinary teaching practice through which non-arts and arts content is taught and assessed equally to enhance students' understanding of both.

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Among the offered courses are Teaching Physical Science with the STEAM approach, Multiple Representations of Mathematics Across the Curriculum, Programming Robotics and Engineering in STEAM, and Arts Integration: Interactive Strategies for STEAM.

Completion of the STEAM concentration coursework leads to a built-in partial completion of the middle school mathematics endorsement program and a partial completion of the requirements for a supervisory certificate.

“Therefore, students would only need two more courses – courses the University offers – to earn another important professional credential,” Professor An says.

The addition of a STEAM concentration to the University’s graduate education program falls in line with the U.S. Department of Education’s call for a new vision in pre-college STEM education, according to Ginsberg. In a recent report, the Department argued that the teaching of STEM subjects needs to be integrated across the curriculum, rather than fall into silos, to develop critical thinking skills young students will need to be successful in our future workplace.

“In order to be a good problem solver, you need to be creative,” Professor An adds, “and if you’re going to be creative, you need the arts.”

Through her role as director of the Geraldine R. Dodge Foundation Arts Integration Grant Program at William Paterson University, Dr. An has seen firsthand the educational benefits afforded to students in several public schools in Paterson, New Jersey where arts integration lessons and activities were implemented over the past six years with support of the grant.

Student achievement, engagement, and creativity blossomed, she says.

For example, a science lesson about planets and the solar system that requires students to work in groups to “build” an assigned planet out of a variety of art materials reinforces the physical properties and characteristics of the planets, as well as different types of art techniques.

However, the STEAM concentration at William Paterson will not only focus on integrating visual art, but also other types of art including, but not limited to, dance/movement and opera.