

Master of Science in Virtual Education with a STEM Concentration

Program Overview

The Master of Science in Virtual STEM Education equips educators to meet the challenges of 21st-century teaching in science, technology, engineering, and mathematics (STEM). The program delivers more than technical expertise—it also strengthens essential skills such as critical thinking, creativity, and problem-solving.

By tapping into the rapid growth of online learning, participants will learn to use advanced technologies and innovative teaching methods to make STEM instruction more accessible and engaging. The program blends theory with practice, preparing educators to design, implement, and evaluate learning programs that incorporate the latest technologies.

The program is designed for educators looking to strengthen their teaching and technology skills, as well as STEM program coordinators and curriculum development specialists. Graduates will be ready to champion inclusive, high-quality STEM education.

Program Objective

Prepare highly skilled professionals to innovate and lead science, technology, engineering, and mathematics (STEM) education in virtual learning environments.

Program Description

This program provides comprehensive preparation that covers both the theoretical foundations and the hands-on practice of STEM education. Participants will learn to design immersive, collaborative learning experiences using advanced digital tools. The focus is on building the competencies needed to meet today's evolving educational demands.

Course Methodology

The program's methodology blends theory with practical application. Digital tools will be used to create interactive learning environments, along with data-driven approaches to assess educational outcomes. Courses are delivered through virtual platforms, enabling flexible, accessible learning. In addition, collaboration is encouraged through real-world projects that connect students with workplace scenarios.

Academic Period	Course Name	Code	Credits
	Technology Development and Integration in Digital Learning Systems	VED6011	3
1 ^o	Foundations of E-Learning and Digital Instruction	VED6012	3
2 ^o	Assessment Design and Evaluation in Online and Distance Education	VED6021	3
	Learning Environment and Diversity	VED6032	3
3 ^o	Fundamentals of STEM Education (*)	VST6031	3
	Innovative Digital Methodologies in STEM Education (*)	VST6032	3
4 ^o	The Ecosystem of Innovation and Knowledge	VED6051	3
	Research Methodology	VED6052	3
5 ^o	Effective STEM-STEAM Strategies for Virtual Education (*)	VST6041	3
	Design and Development of STEM Educational Products and Programs (*)	VST6042	3
6 ^o	Cloud Learning Environment, and Comparative Study	VED6061	3
	Thesis	VED6062	3

(*) Courses replacing the set of Concentration courses related to the standard MS in Virtual Education.

VED6011 - Technology Development and Integration in Digital Learning Systems: This course covers the implementation of technology in distance education, exploring how these tools can enhance both learning and teaching.

VED6012 - Foundations of E-Learning and Digital Instruction: It focuses on the core principles of e-learning, providing a strong foundation for understanding how it's applied in educational settings.

VED6021 - Assessment Design and Evaluation in Online and Distance Education: This course takes an in-depth look at the key features and targeted strategies of e-learning, with an emphasis on what works and how to apply it in real-world settings.

VED6032 - Learning Environment and Diversity: Examines emerging technologies that are shaping virtual education, analyzing how they can be integrated into the teaching-learning process.

VST6031 - Fundamentals of STEM Education: Designed for educators and program coordinators, this course focuses on the core foundations and essential practices for teaching science, technology, engineering, and mathematics (STEM).

VST6032 - Innovative Digital Methodologies in STEM Education: This course prepares participants to use digital tools and innovative methods to strengthen and enhance STEM instruction.

VED6051 - The Ecosystem of Innovation and Knowledge: This course explores how educational innovations are created and put into practice, fostering a collaborative culture.

VED6052 - Research Methodology: Provides methodological tools for conducting effective educational research.

VST6041 - Effective STEM-STEAM Strategies for Virtual Education: Focuses on STEM- and STEAM-based teaching strategies for virtual settings, offering educators practical, ready-to-use tools.

VST6042 - Design and Development of STEM Educational Products and Programs: Participants will learn to design and implement innovative educational products through a STEM lens, using agile methods to assess their impact.

VED6061 - Cloud Learning Environment, and Comparative Study: Examines cloud-based platforms that support and enhance collaborative learning.

VED6062 - Thesis: Students will develop a capstone project that brings together the knowledge gained throughout the program.

This program is designed to equip educators with the skills needed to lead and transform learning environments through the effective use of advanced technologies and innovative teaching approaches. Graduates will be prepared to meet the challenges of 21st-century virtual education, promoting inclusive, high-quality instruction.