MASTER OF SCIENCE IN VIRTUAL EDUCATION WITH CONCENTRATION IN NEUROSCIENCE

BIU **University**

Mode	Language	Duration
Online	Spanish	18 months

Course Descriptions

- **VED611 Development and Integration of Distance and Virtual Education Technologies (3 credits)** The main objective of this course is to present an overview of virtual education. From the beginning, students will have a clear vision of how Virtual Education has changed the teaching process and how it will influence the future. We will study all levels of the distance education system, providing students with the opportunity to have a broad perspective of Virtual Education applications.

- **VED612 Fundamentals of e-learning (3 Credits)** Online learning (e-learning) in the 21st century provides a coherent, comprehensive and empirical framework of understanding. This course explores the technological, pedagogical and organizational implications of the e-learning system. The course provides practical models that enable students to utilize the full potential of e-learning; in addition, special attention is given to understanding these technologies from an educational perspective.

- **VED621 Virtual education and online learning (3 Credits)** Information and communication technologies and their impact on the world of learning in the last decade have profoundly changed the paradigms, scenarios and values of education at all levels. The professionalization of tools and practices, in addition to the consolidation of academic and technical knowledge, has been an important constant issue throughout the last years. This course addresses the development in the field of open, distance and online learning through new information and communication technologies, methodologies and tools, which have profoundly changed paradigms, scenarios and values at all levels of education during the recent decade.

- **VED622 Virtual Education and Technology (3 Credits)** Web technologies are having a great impact on commerce, media, business and education in general. Beginning with the "Edu-blogosphere", this course will focus on the effect that web technologies are having in the educational arena. Students will explore the potential of blogs, media sharing services and other social programs that, while not specifically designed for e-learning, can be used to train students and create new and engaging opportunities where learning is much more personal, social and flexible.

- **VNS631 Fundamentals of educational neuroscience (3 credits)** This introductory neuroscience course is designed for educators with little or no knowledge of biological sciences or neuroscience, and aims to provide an overview of the functioning of the human brain and evaluate the feasibility of using this neuroscientific knowledge to address key aspects of neuroscience. education. This course studies the anatomy and physiology of the human brain, the way neuronal cells communicate through electrical and chemical signals, the development of the human brain, the functions and organization of the attention, memory and emotional systems of the brain. brain, the relationship between neuroscience and learning, understanding the concept of neuroplasticity, its role in learning and the way in which changes in it translate into changes in human intelligence, as well as other basic functions of the human brain that influence how it learns. The main purpose of this course is to explore how this knowledge could be used, if possible, to improve the practices and effectiveness of educators in promoting the learning process.

- **VNS632 Cognitive neuroscience and education (3 credits)** This introductory course in cognitive neuroscience is designed for students without prior knowledge in biology, medical sciences, psychology, or any other related training. It aims to provide an overview of the history, research methods and current state of research in cognitive neuroscience, as well as the possible educational applications of the contributions of this discipline. Likewise, it is intended to facilitate the understanding of individual differences in human cognitive and brain development, particularly in response to the process of transformation into a mature and active learner. Additionally, this course offers an understanding of cognitive and behavioral development, and how they relate to intelligence, memory, emotions, and learning. The application of cognitive behavior to educational practices is addressed, both in classrooms and in curricular reforms. This course also addresses controversies related to some of the inaccurate expectations created around the contributions of cognitive neuroscience that could be useful to educators. Finally, the present and future of the relationship between Neuroscience and Education is reviewed.

- **VNS641 Applications of Neuroscience to Education (3 credits)** This course is designed for students to carry out bibliographic research focused on reviewing the latest in neuroscientific research and its direct applications to education. Students must review publications that reflect both the positive and negative implications that neuroscience has on educational practices and student learning, and establish and defend, based on the knowledge acquired, their position regarding the advantages and disadvantages of neuroscience. brain-based learning approach

- **VNS642 Psychology of learning and instructional design (3 credits)** This course provides students with a comprehensive overview of cognitive and behavioral perspectives on human learning and knowledge retention, and reviews instructional strategies designed to teach students based on their individual learning differences. It delves into the social, emotional and cognitive processes involved in learning, learning theories (constructivism, behaviorism, Piaget's theory of development, brain-based learning, multiple intelligences, right brain/left brain), identification and the study of learning methods to better understand how people absorb and retain new information, and the proposal of specific strategies to educators to adjust instructional designs and lesson plans in order to improve the learning process of students in depending on their individual differences in said process. As time allows, other topics related to educational psychology that are key to promoting learning will be discussed.

- **VED651 The innovation and knowledge ecosystem (3 Credits)** The context of this course is the interaction between the student and a set of interrelated resources that are not linked to a physical or virtual location. This context belongs to an individual and is created through his or her interactions in the world. Students will analyze the learner-based "Resource Ecology" context model as a framework for designing learning environments with technology and understanding the importance of tailoring available resources to the needs of each learner. This interdisciplinary course will draw on a number of fields, such as geography, anthropology, psychology, education and computer science, to find the dynamics and greatest potential of teacher-student interaction within a continuous learning process and in a variety of locations.

- **VED652 Research Methodology (3 Credits)** In this course, students will develop a scientific research project that will serve as the basis for the completion of a Master's Thesis. To do this, students must rigorously follow the applicable steps of the scientific method, which includes the part of the research process related to conceptualization and ethics, as well as the description of the qualitative, quantitative or mixed scientific method to follow. Specifically, students will identify and define a problem of interest that warrants the search for a solution and/or answers to questions related to the problem, which have been formulated to improve their understanding; address the problem and/or related questions by conducting background research to gather information to become familiar with what is known about the problem so far and/or the proposed related questions, including their possible answers; They will establish the parameters that will be used to study and understand the selected problem and/or the questions asked. They will conceptualize and design the scientific method that will be applied to carry out the study. They will plan and present a precise and complete research proposal that includes all of the above elements and, in addition, a detailed description of the procedures that will be followed during the execution of the field work, as well as the population that is expected to participate and/or the sampling to be collected for future analysis, and the description of the evaluation method of the information obtained. Students should follow the most up-to-date version of APA guidelines to write their research project. The student must successfully complete this requirement with a grade of B or higher to graduate.

- **VED661 Cloud Learning Environment and Comparative Study (3 Credits)** In this course, students will study the development of virtual education around the world with the intention of comparing experiences and deciding their own point of view on the state of virtual education. Starting with the definition of cloud computing, why it exists and what are its pros and cons, this course will provide students with a variety of experiences. Students will explore all the features of cloud platforms, infrastructure, services and applications, and security. They will evaluate the value of cloud computing, including licensing models, ROI, understanding abstraction, partitioning, virtualization, capacity planning, and various scheduling solutions. They will discuss the use of Google®, Amazon® and Microsoft® web services, explore cloud communication methods such as instant messaging, Twitter®, Google Buzz and Facebook®, and learn how cloud services are changing cell phones and vice versa.

- **VED662 Thesis (3 Credits)** In this course students are expected to continue and complete their Master's Thesis. For this purpose, students must systematically follow the scientific method described as part of their previously completed and approved research project. During this final phase, the student must execute the approved procedure to execute the field work, which could be repeated as necessary to ensure that the data collected is accurate and reliable at the time of collection. Compile information obtained from experimentation and/or observation. Carefully record all collected data (observations, measurements, survey information, among other predetermined data) based on the variables evaluated. Analyze the recorded data applying the appropriate methodology; Interpret the results, focusing mainly on providing a solution to the selected problem and/or answering the related questions that have been proposed, without ruling out opportunities to address other aspects of the problem posed that have not been previously identified as objectives, but that are derived of the interpretation of the data obtained. Establish the conclusions inferred from the experimental results and present recommendations that suggest new relevant scientific research. Students must follow the most up-to-date version of APA standards to write their Master's Thesis, and coordinate a final oral presentation, which should be considered an integral part of a research project. The student must successfully complete this requirement with a grade of B or higher to graduate.