



# DOMINICAN UNIVERSITY

## School of Education

### Technology Specialist Endorsement Course Descriptions

#### **EDU 776/LIS 724 Integrating Technology into Programming, Services, and Instruction**

This course provides an overview of media technologies used in the teaching/learning process. Emphasis is given to effective utilization of media (including interactive and multimedia technologies); facilitating creation/production of media by students and teachers in elementary, middle and secondary schools; copyright issues; and planning for technology. (3-credit hours)

#### **EDU 777/LIS 734 Learning Theories and Instructional Designs**

This course focuses on the identification and application of educational and technology-related research, the psychology of learning theories, and instructional design principles in guiding use of computers and technology in education. (3-credit hours)

#### **EDU 778/LIS 735 Hardware, Operating Systems, Networking and Troubleshooting**

This course provides candidates with knowledge of computer hardware and networking, enabling them to identify and rectify computer hardware, software and network related problems. With the help of this course the candidates will be able to understand the hardware specifications that are required to run operating systems and various classroom application programs. This also includes upgrading of existing hardware/software as and when required. (3-credit hours)

#### **EDU 779/LIS 754 Systems Analysis and Design**

This course introduces candidates to the concepts and techniques of systems analysis and design focusing on their application to educational systems and services. Candidates will explore formal methods for modeling systems and industry practice techniques of analysis that are used to address problems and opportunities in education-based organizations. (3-credit hours)

#### **EDU 780/LIS 736 Digital & Media Literacy in the Classroom**

This course explores how media and technology have changed the literacy skills and strategies K–12 students need to develop to access, evaluate, and produce information. Candidates will explore current educational theories, trends, and tools in the use of instructional media and technology across grade levels and subject areas. They will design and teach a lesson with a focus on skills needed for the successful use of technology tools in a P-12 setting based on local, state, and national standards. They will also design and deliver a professional learning experience for other educators about the effective use of technology in teaching and learning. (3-credit hours)

### **EDU 781/LIS 765 Technology for Leaders**

This course focuses on the identification of the components of the role of leadership in the application and integration of technology into the learning process and administrative roles of an organization. It is critical that leaders identify the importance of developing a shared vision of technology in the teaching/learning lifecycle, comprehend change protocols, and develop a strategic plan to guide the implementation and evaluation of technology. During this course, candidates will complete a Capstone Project that will consist of determining a technology need in their educational settings, design a plan to meet this need, field test it and analyze its outcome. (3-credit hours)

### **Special Topics: In-depth Studies of Technology Innovation Electives (Choose two)**

#### **EDU 782/LIS 738 Technology in STEM**

This course explores the integration of technology into STEM classes in P-12 schools. To follow the Common Core State Standards for Mathematics, NCTM's recommendation for the use of technology in mathematics classrooms, and the Next Generation Science Standards, the course will explore the rationales and technological Pedagogical Content Knowledge (TPACK) for integrating technology into mathematics and science classrooms. The technology tools teachers will explore may include Internet applications and resources, iPad apps, SmartBoard, graphing calculators, and Geometer's Sketchpad etc. Candidates will produce projects to understand and explore the effective use of technology in STEM classrooms. (3-credit hours)

#### **EDU 783/LIS 739 Online/Blended Learning**

The course introduces P-12 teachers to blended and online learning. It will introduce them to the current trends and standards in P-12 online teaching and learning; the best practices of engagement, assessment, and differentiation online; and the current technology for online instruction. Candidates will design a syllabus for an online course appropriate for his/her classroom; design a unit of learning for P-12 students; develop one module of blended or online instruction for P-12 students; and evaluate the quality of three modules for blended/online instruction for P-12 students. (3-credit hours)

#### **EDU 784/LIS 746 Teaching and Learning in a 1:1/BYOD Environment**

This course focuses on the 1:1/BYOD (Bring Your Own Device) model of teaching and learning. Candidates will explore the technology tools, learning theories, and teaching practices that can be developed/utilized to bring this new and innovative way to personalize learning for students in their P-12 classrooms. They will develop a plan to bring and implement 1:1/BYOD to their schools and design and teach a lesson using it that can be utilized in their classrooms with their students. (3-credit hours)

#### **EDU 785/LIS 747 3-D Printing**

This course presents a new form of publishing and manufacturing, 3D printing. 3D printing represents the ability to physically engage with the end product of a three-dimensional computer design. Because of the ability to make the virtual physical, 3D printing has numerous applications to a school setting. Whether a teacher wants to create scalable models of microscopic organisms or chemical elements to engage their students, or an instructor wants to improve a student's spatial and visual skills through computer-aided design, a 3D printer represents an indispensable tool for a 21st century school. This course prepares candidates to learn about the affordances and constraints of a 3D printer as well as how to use a computer-aided design program to produce an end product via such a device in their P-12 schools/classrooms. (3-credit hours)

**EDU 786/LIS 741 Gaming in Education**

This course explores how educational games have been used in the classroom for over three decades, and how with the increased acceptance of gaming as a viable means for learning, it can be utilized by today's P-12 teachers. Gamification means bringing some aspect of game design and game theory to bear in course design and class management. This course would familiarize candidates with the concepts and theories of game design across a variety of gaming media in order to help them learn how to gamify their own classes. Participants will be asked to deconstruct a variety of games in order to understand what makes them educational yet engaging, and then design their own game for a gaming medium of their choice. (3-credit hours)

**EDU 787/LIS 742 Video Production**

This course focuses on digital video production providing design theory and hands-on with camera technique and non-linear editing. Candidates will learn how to take this knowledge and integrate it into the learning process for their P-12 students. They will capture, create, and edit video files for media productions and various delivery formats and learn how these can be integrated in their P-12 curriculums. (3-credit hours)

**EDU 788/LIS 751 Data Management Systems**

An introduction to database concepts, database design and database implementation. Examines the role of data in the educational environment and the application of database principles in information storage and handling. Candidates will have hands-on practice with a database management system. (3-credit hours)

**EDU 789/LIS 753 Internet Fundamentals and Design**

This course introduces candidates to the fundamentals of the Internet, including its origins, evolution, architecture, current issues and future. Candidates will gain a basic understanding of Web content Languages, Website management, and design/usability principles. Critical Internet issues such as security, privacy, copyright and governance will be discussed within the context of educational services. Candidates will design a website that could be utilized in an educational setting. (3-credit hours)

**EDU 790/LIS 768 Social Media and Emerging Technologies**

This course examines the latest applications of social media and emerging technologies in educational settings. Candidates will experience an immersive learning environment via popular social media platforms and hands-on practices in the lab. Multimedia information creation and dissemination, new online business models, data security, ethics and privacy issues will also be explored. (3-credit hours)

**EDU 791/LIS 743 Assistive Technology**

This course explores the teaching and learning of students with disabilities. Candidates gain hands-on experience using a variety of evidence-based assistive technology tools. They gain an understanding of procedures for the assessment of assistive technology needs, and decision-making guides and frameworks for planning for the use of assistive technology as well as use of assistive technology to support Universal Design for Instruction. Candidates examine ways of integrating assistive technology tools into students' IEPs in order to increase access to the general education curriculum. Candidates also gain experience using technology for administrative purposes, such as gathering and charting data, and monitoring progress. (3-credit hours)

