



801 N Orange Ave
Sarasota, FL 34236
(941) 926-1700

Artificial Intelligence & Advanced Technologies

Advanced Career Preparation Pathway

Learn the power of Artificial Intelligence and Advanced Technologies

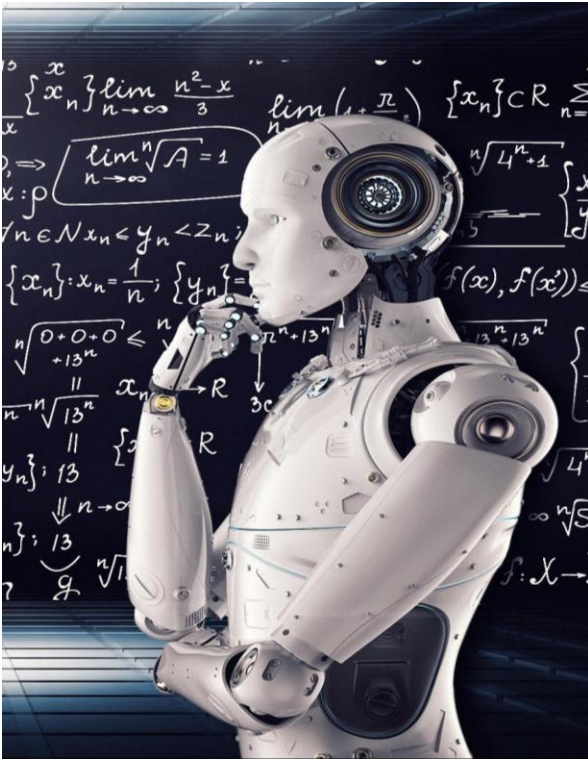
Program Content:

In this pathway students will gain expertise in one of the most fascinating and fastest growing areas of computer science through an innovative high school program that covers diverse and compelling topics in the

2 Artificial Intelligence & Advanced Technologies Courses

field of Artificial Intelligence and its applications. This program will give you a rigorous, advanced, professional foundation in Artificial Intelligence.

What You Will Learn:



- Solid understanding of the guiding principles of AI.
- Apply concepts of machine learning to real-life problems and applications.
- Design and harness the power of neural networks.
 - Broad applications of AI in the fields of robotics, vision, and physical simulations.

Industry Certifications:

- AI / ML
- Python
- Robotics
- Cybersecurity

Recommended Prerequisites:

- Emerging Technology in Business (8207010)
- Computer Science or IT Equivalent

Course Sequence:

Course Title	Course #	Prerequisite	FLDOE Title	Credit
Emerging Technology in Business	8207010	None	Emerging Technology in Business	1

3 Artificial Intelligence & Advanced Technologies Courses

	<p>The purpose of this program is to give students an opportunity to apply knowledge and skills related to the area of Emerging Technology in Business.</p> <p>The content includes but is not limited to electronic research methods; business communications including speaking, listening, writing, and telecommunication; multimedia presentation skills; ethical considerations related to technology; and emerging technologies affecting business environments. Instruction is designed to provide an understanding of the advances being made in technology today and in the future. (i.e. AI, VR, AR, ML, IOT, Robotic, Automation, Cyber, Big Data, Cloud Computing, Edge Computing,</p>				
	AP Computer Science Principles (Python)		None	AP Computer Science Principles	1
A	Foundations of Programming (Python)	9007210	None	Foundations of Programming	1
B	Artificial Intelligence and Machine Learning Foundations	9005210	(Python)	Modeling and Simulation Foundations	1
	<p>This course provides an overview of the development and expansion of the field of Artificial intelligence (AI) and its impact on society and industry. Strategies, processes and methods for conceptualizing and producing Artificial Intelligence simulation are introduced to serve as a foundation to cultivate interest and introduce technology skills and knowledge necessary for careers in AI, Machine Learning, Big Data, and Computer Science.</p> <p>Hands-on activities using AI modeling and simulation development tools (i.e. Pytorch, Tensorflow, Fusion360, or other comparable software) will be integrated into the curriculum. The culminating activity is the creation of a visual AI model to aid in the development of a professional portfolio showcasing knowledge.</p>				
C	3D Design for Artificial Intelligence Simulation	9005220	None	Modeling and Simulation Design	1
	<p>This course explores the fundamental principles of 3D modeling and simulation design for Artificial Intelligence and application including modeling principles, 3D software, problem analysis, problem solving and its implications for meeting the needs of industry and society.</p> <p>Hands-on activities using AI modeling and simulation development tools (i.e. Fusion360, Blender, 3D</p>				

4 Artificial Intelligence & Advanced Technologies Courses

	Printers, Pytorch, Tensorflow, or other comparable software) will be integrated into the curriculum. The culminating activity is the creation of a visual AI model to aid in the development of a professional portfolio showcasing knowledge.				
D	Robotics and Automation	9005230	None	Modeling and Simulation Applications	1
<p>This course focuses on the acquisition of technology skills for rendering a Modeling and Simulation product, including visual simulation and engineering logistics and implementation issues as they relate to Modeling and Simulation products.</p> <p>Hands-on activities using an entry-level Robotics and Automation development tool (i.e. Matlab, VEX, AWS, Fusion360 or other comparable software) will be integrated into the curriculum. The culminating activity is the creation of a 3D simulation designed to train Robotic Artificial Intelligence that will be deployed to a Robot or Automation in the physical world. This design should aid in the development of a professional portfolio in AI Robotic Applications.</p>					
E	Advanced AI Application	9005240	ABCD	Modeling and Simulation Prototyping and Innovation	1
<p>This course provides students with the extended Artificial Intelligence modeling and simulation content and builds on skills essential for innovating, designing and producing prototypes for use in the world.</p> <p>Hands-on activities using AI / ML modeling and simulation development tools (i.e. Pytorch, Tensorflow, Fusion360, or other comparable software) will be integrated into the curriculum. The culminating activity is the completion of a capstone project to demonstrate competency in the field of AI / ML research, design and practice and to aid in the completion of a professional portfolio.</p>					

Occupations Outlook:

- Kiplinger report, "Artificial Intelligence is one of the fastest-growing areas for high tech professionals yet there are too few qualified engineers."
- Robotics and Artificial Intelligence will impact many facets of daily life by 2025, with huge implications for a range of industries such as health care, transport and logistics, customer service, and home maintenance. (Pew Internet)
- The need for AI specialists exists in just about every field as companies seek to give computers the ability to think, learn, and adapt. (IEEE)
- Exciting and rewarding career opportunities include a Machine Learning Software Engineer, Deep Learning Specialist, Data Scientist, Automation Engineer, 3D Artist, Computer Vision Engineer, and many, many more.