

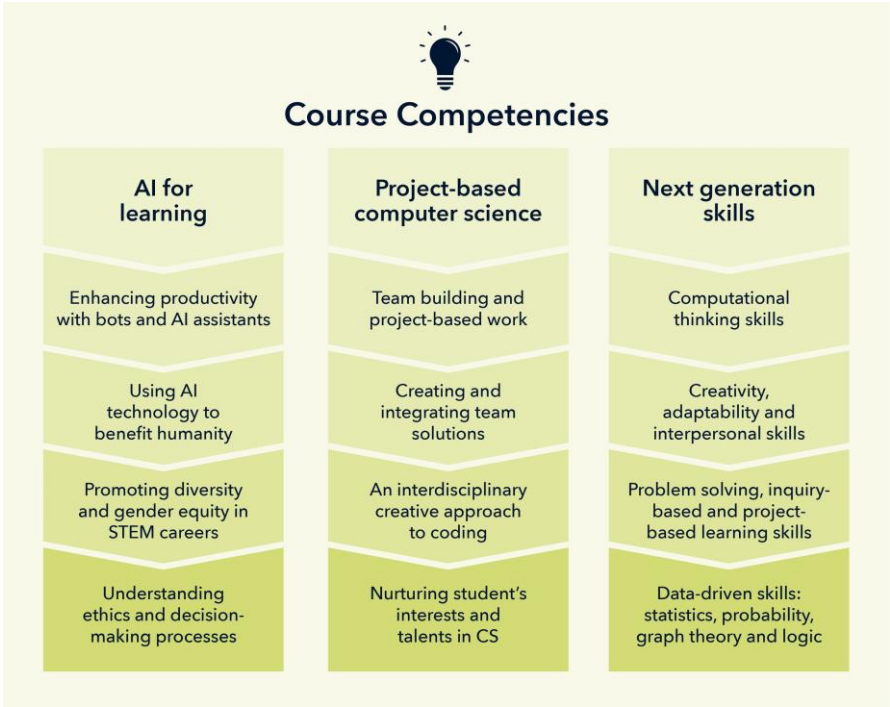


ONLINE COURSE SYLLABUS

Course Description

Artificial Intelligence Explorations and Their Practical Use in School Environments introduces you to the field of Artificial Intelligence (AI) and its application in K-12 environments through presentations, examples of practical use, tools and resources for implementation, and interactive activities. This course focuses on aspects of AI technologies that have the potential to facilitate and leverage learning, and solve real problems in schools and communities. As educators, you will also learn to unveil to your students how AI technologies are embedded in many different aspects of our lives. You will actively engage in the course content as you participate in online activities, and complete hands-on assignments to apply your learning. Throughout the course, you will acquire strategies to draw upon as you design and develop artifacts for explaining and integrating AI technologies into teaching and learning.

As a result of the AI Explorations course, you will have the competencies to nurture student understanding of AI applications in learning; develop students’ project-based computer science skills; and provide opportunities to build next generation skills.



Course Structure

This AI Explorations course is a 15 hour course, composed of 8 modules. This is an asynchronous course with 8 weekly end-of-module deadlines. Modules 1 through 7 each include a team-based assignment to submit. At the end of Module 8, your team will submit a Capstone Project.

Course Goals and Outcomes

Artificial Intelligence Explorations and Their Practical Use in School Environments prepares you to introduce AI into your classroom. As a result of the course, you will be able to meet the following goals:

- Articulate a basic understanding of different artificial intelligence concepts: what they are, how they work, and their current applications.
- Identify how specific artificial intelligence concepts, tools, and applications can cultivate student-driven learning explorations and support cross-curricular goals for teaching and learning.
- Reflect on ways to leverage artificial intelligence applications to support student achievement, nurture students' interests and talents in computer science, and develop STEM skills and career awareness.

Participant Profile

This course is intended as a primer on AI and is appropriate for K-12 educators and educational leaders, across all content areas, who are comfortable with technology and technology integration. Coding skills are not required in this course. The course is meant to provide an interdisciplinary approach to integrating AI experiences that allow students to create with AI technology and leverage AI for learning.

ISTE Standards and Competencies

The course addresses ISTE's Standards with a strong emphasis on the [ISTE Standards for Educators](#) and [ISTE Standards for Students](#). These Standards are woven throughout the activities and assignments in the course.

Module Descriptions

MODULE 1: INTRODUCTION TO AI

Are machines outsmarting humans? What exactly is Artificial Intelligence (AI)? And, how does it affect me and my students? Module 1 provides an overview of AI and explores its origins.

MODULE 2: AI PERCEPTION

In Module 2, you will explore the visual perception and linguistic capabilities of machines. Machine perception aims to replicate a human's ability to understand their surroundings and involves technologies such as image and speech recognition.

MODULE 3: MACHINE LEARNING AND PROBLEM SOLVING

In Module 3, you will explore how machines make decisions. One of the characteristics of human intelligence is the ability to learn by making associations based on past experiences. Recreating that ability in AI has been one of its biggest challenges, but the field recently has had a lot of success in this area.

MODULE 4: AUTOMATING INTERACTIONS VIA CHATBOTS AND VOICE EXPERIENCES

In Module 4, you will explore chatbots and voice experiences, learn how they function, what their relationship is to AI, and how they can be useful in K-12 education. You will also gain an understanding of natural language processing, which powers AI chatbots and voice experiences.

MODULE 5: SEARCH

In this module, you will gain an understanding of the AI features of search engines that make search more effective. You will also learn how a free teacher tool from IBM uses Watson AI technology and custom elementary math machine learning model training to provide a targeted and sophisticated search experience for teachers.

MODULE 6: IMPROVING STUDENT AND TEACHER UNDERSTANDING WITH DATA MINING

In Module 6, you will become aware of AI tools and applications that can identify trends in data and be used to monitor students' progress and support student learning.

MODULE 7: INTEGRATING AI IN THE CLASSROOM

In Module 7, you will focus on integrating AI into your classroom. This will include reviewing AI competencies for students, considering integration strategies like project-based learning and design thinking, and considering how to support students in thinking about the impact of AI on future careers. In this module, you will also start working on your Capstone Project.

MODULE 8: AI CONSIDERATIONS AND THE FUTURE

In Module 8, you will explore ethical issues that AI poses as you consider the impact of AI on your and your students' lives. This module also provides time for you to finalize and submit your Capstone Project.

Completion Criteria

The course is designed to be completed in 15 hours. Course completion is determined by submitting 7 weekly group assignments and successfully completing a final Capstone Project.

Webinars

Three webinars will be provided to support and supplement your work in the online course: a kick-off webinar during week 1, a midpoint webinar during week 4, and a wrap-up webinar during week 7. You have the option of participating in the webinars live or watching the webinar archives.

Professional Learning Network (PLN)

Participating in ISTE's AI Professional Learning Network (PLN) is highly encouraged throughout the course and beyond as a place to explore and share resources and engage with your colleagues. To participate in the PLN, establish a Facebook account and join the ISTE AI & STEM Explorations Network Facebook Community.

Disclaimers

This course is a production of the International Society for Technology in Education (ISTE). This course contains examples and resource materials that are provided for participants' convenience and information. The inclusion of any material is not intended to endorse any views expressed, or products or services offered. These materials may contain the views and recommendations of various subject matter experts as well as hypertext links, and websites to information created and maintained by other public and private organizations. The opinions expressed in any of these materials do not necessarily reflect the positions or policies of ISTE. ISTE does not control or guarantee the accuracy, relevance, timeliness, or completeness of any outside information included in these materials.

NOTE: A variety of applications are highlighted throughout this course. Prior to using any of them with students, it is imperative that participants check the account requirements for each application against their school/district student data privacy policy to insure the application complies with district policy. In addition, some applications' Terms of Service may require parental permission to be COPPA and FERPA compliant for students younger than 13 years of age. Before any student under the age of 18 accesses the Amazon Developer Portal, a parent or legal guardian must create a developer account for that student.

Content in this course is subject to change at instructor's or ISTE's discretion.