New Course Proposal

Changes saved but not submitted

Viewing: **CIS 212 : Introduction to AI Programming**

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General Information

Submitter:	User ID: marc.goodman Phone: 503-548-8952
Course Prefix	Computer Information Systems (CIS)
Is this a Oregon Common Course Number (CCN)?	No
Course Number	212
Course Type	Career Technical Education
Implementation Term	Fall 2026
Course Title	Introduction to AI Programming
Transcript Title	Introduction to AI Programming
Contact Hours per Quarter	**Lecture:** Meets **3** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **90** **Lec/Lab:** Meets **0** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **0** **Lab:** Meets **3** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **30** **Total** student academic engagement hours for course: **120**
Credits	4
Please indicate the basis for creating this experimental course:	
Rationale for new course:	AI technology has had a profound impact on the field of Information Technology in general, and on computer programming and application development in particular. The CIS Program has many courses that are adjacent to AI including: programming and application development in a variety of programming language including Python, Data analytics and visualization, Data modeling and SQL, and Web development and design. This course augments that curriculum by integrating existing AI functionality through publicly available libraries and modules using existing Application Programming Interfaces (APIs).
Grading Option(s)	Audit Letter Grade Pass/No Pass
Default Grading Option	Letter Grade

Course Description	Introduces students to AI programming using existing AI models through released APIs. Covers the creation of AI-enabled applications with enhanced capabilities, including speech to text, text to speech, image and text generation, and computer vision. The course covers installing and integrating existing AI modules and models, integration with Python application code, using Large Language Models (LLMs) as collaborative partners in the design and implementation of applications, and ethical considerations in AI development.
Prerequisites	CIS 133Y Python Programming I
Pre/Concurrent Courses	CIS 275 Data Modeling and SQL Introduction
Corequisites	

Course Content and Outcome Guide (CCOG)

Addendum to Course Description

Outcomes

Upon completion of the course, students should be able to:

- Integrate AI models into applications using released APIs.
- Develop AI-enabled applications that enhance user experience and functionality.
- Use AI ethically and with an awareness of biases in the models.
- Evaluate the performance and limitations of AI models in application contexts.
- Utilize Python programming skills to manipulate and deploy AI technologies.

Aspirational Goals

- Use AI technology effectively in Industry.
- Fine-tune pretrained models to meet specific application requirements.
- Curate custom datasets that can be used for Retrieval Augmented Generation (RAGs) and Low-Rank Adaptation of Large Language Models (LoRAs).
- Keep abreast of current developments in AI technology with an eye toward application enhancement and resilience in the face of a rapidly changing technological landscape.

Course Activities and Design

Outcomes Assessment Strategies

The course will include a large number of hands-on labs where students build AI-enabled applications using existing models. There will also be tests of factual knowledge and understanding of ethical issues related to AI use and the strengths, limitations, and biases of the various technologies.

Course Content: Themes, Concepts, Issues and Skills

- Introduction to AI Programming:
  - Overview of AI models and APIs.
  - Understanding AI model capabilities and limitations.
- API Integration:
  - Accessing and using AI APIs (e.g., OpenAI, Google Cloud AI).
  - Practical exercises in API integration with Python.
- Developing AI-Enabled Applications:
  - Designing applications that leverage AI capabilities.
  - Implementing AI features such as natural language processing, image recognition, and data analysis.
  - Enhancing the accessibility of applications using AI technology.
- Ethical Considerations in AI Development:
  - Addressing bias and fairness in AI applications.
  - Privacy and security concerns in AI programming.
  - Responsible AI deployment and usage.
  - Using AI as a set of assistive technologies to build accessible applications.
- Performance Evaluation:
  - Assessing AI model performance in real-world applications.
  - Identifying and addressing limitations and challenges.

Related Instruction

Will this course include embedded related instruction? No

Function of the new course within an existing and/or new program(s)

Please select the degree(s) and/or certificate(s) that this course will be part of from the list. If the course will be part of a new degree or certificate, select "New Degree/Certificate"

Degree/Certificate Name	# of Credits
Computer Information Systems Program Electives	4
Computer Information Systems One-Year Certificate	4

Briefly explain how this course fits into the above program(s), i.e. requirement or elective:	This course will be an elective in our AAS CIS degree, as well as our CIS One-Year Certificate.

Additional Information

Transferability: Will this course transfer to another academic institution?	Yes Identify This course is currently under proposal to the Oregon Council of Computer Chairs for addition to the CS/CIS common course numbers list.

Impact on Other Programs and Departments

Are there other degrees and/or certificated that are affected by the instruction of this course?	No Provide Details
Are there similar courses existing in other programs or disciplines at PCC?	No
Have you consulted with the SAC Chair(s) of other program(s) regarding potential impact such as content overlap, duplication, prerequisites, enrollment impact etc.	Yes Explain and/or describe the nature of acknowledgements and/or agreements that have been reached. We have discussed this course with the CS department at PCC.
Is there any potential impact on another department or campus?	No
Course reviewer comments	

Key: 12468