|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quick Links** *(click to jump to section)* | | | | |
| [**Basic Info & Welcome**](#_Welcome_to_[INSERT) | [**Finding Resources**](#_How_to_Find) | [**Course Outcomes & Gen Ed Status**](#_Core_Learning_Outcomes) | [**Grades & Policies**](#_What_Will_You) | [**Assignments & Schedule**](#_How_Much_Time) |

# Welcome to the **AI Systems Protection and Governance** class at Frederick Community College!

|  |  |  |
| --- | --- | --- |
| **We Start:** 08/xx/202x | **We End:** 12/xx/202x | **We Meet:** Monday, Wednesday, Friday at 6:00 PM – 7:15 PM |
| **Our Classroom is:** C205, Catoctin Hall | | **Extra Fees:** N/A |

My name is Dr. Joshua Paiz**,** and I’ll be your instructor for this section. My contact info is below:

|  |  |
| --- | --- |
| **Email:** jpaiz@frederick.edu | **Phone:** (301) 624-2804 |
| **Office Room Number:** B228, Braddock Hall | **Mailbox:** B224 |
| **Office Hours:** Monday, Wednesday, Friday 4:30-5:30 PM and by appointment | |

# **Course Description**

CMIS 102 *AI in Practice: Applications, Literacy, and Ethics* builds on the foundational technology concepts from CMIS 101, this course explores the principles, applications, and societal implications of artificial intelligence in contemporary personal and professional contexts. Students will develop practical AI literacy through hands-on experience with current AI tools and platforms, learning to understand and effectively utilize AI technologies rather than build them from scratch. The course demystifies artificial intelligence by examining how these systems work, what they can and cannot do, and how they are transforming various industries from healthcare to finance to creative fields.

Core topics include understanding machine learning fundamentals, mastering prompt engineering techniques, working with generative AI tools for text, image, and code generation, and learning to critically evaluate AI-generated content for accuracy and bias. Students will explore practical applications through real-world case studies and hands-on projects using tools like ChatGPT, Claude, DALL-E, and other accessible AI platforms. The course also addresses crucial considerations such as data privacy, algorithmic bias, AI hallucinations, intellectual property concerns, and the impact of automation on employment and society.

Throughout the course, emphasis is placed on developing students into informed, responsible AI users who can leverage these technologies effectively while understanding their limitations and broader impacts. Students will learn to detect AI-generated content, understand when AI use is appropriate, develop strategies for human-AI collaboration, and apply ethical decision-making frameworks to AI adoption in workplace settings. By course completion, students will possess the critical AI literacy skills necessary to navigate an increasingly AI-integrated world, whether as employees, entrepreneurs, or engaged citizens making informed decisions about these transformative technologies.

# **Welcome Message**

# Welcome *to AI in Practice: Applications, Literacy, and Ethics*! You'll be introduced to the transformative world of artificial intelligence and learn to navigate it as an informed, capable user.

# Whether you're coming from CMIS 101, pursuing a career in technology, or simply seeking to understand AI's growing role in your field, your perspectives and experiences will enrich our discussions about this rapidly evolving technology. Questions and critical thinking are encouraged, hands-on experimentation is essential, and collaborative learning will help us all develop the AI literacy skills needed to thrive in an increasingly AI-integrated world.

# **About FCC’s Commitment to Equity**

It’s FCC's mission to serve students from all diverse backgrounds and perspectives; to address students’ learning needs; and to respect students' identities, including sexuality, gender identity and expression, disability, age, religion, socio-economic status, ethnicity, race, and culture.

While I will do my part to ensure that all students are seen, heard, and valued, your suggestions on how to make this class an inclusive space are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements.   
*(adapted from FCC's Diversity statement and Montgomery College)*

# **What You’ll Need for This Course**

# Textbook: The required materials, provided by the instructor under the Fair Use Doctrine (17 USC 107), can be found on Blackboard. Other Learning Materials: Available on the course Blackboard site. Other Required Equipment or Materials:

(1) Access to the internet to complete coursework on Blackboard and to interact with cloud-based based AI platforms.

(2) The use of Microsoft Office 365 suite (including Word, Excel, and PowerPoint). FCC students and employees can install Microsoft Office 365 on their devices at no cost. To gain access to your free software, please go to Office365.

(3) Free accounts for AI platforms including ChatGPT, Claude, Microsoft Copilot, and Google Gemini (instructions for account creation will be provided in Week 1). Note: Free tier accounts are sufficient for all coursework; paid subscriptions are not required.

(4) Access to a computer capable of running modern web browsers (Chrome, Firefox, Edge, or Safari). Tablets may be used for some activities but are not recommended as the primary device.

(5) Optional: A USB drive to save work if you complete assignments on a public computer, and a notebook for documenting AI experiments and reflections.

Note: No programming experience or coding environment is required. All AI tools used in this course are accessible through web interfaces.

# **How to Find Resources at FCC**

If you need any of the supplies listed above, the FCC Bookstore is a good place to start. But that’s not all! FCC has a wide range of resources available to you – from advising and tutoring, to mental health resources and food lockers, to a writing center and support services, and everything in between. Explore the options [online](https://www.frederick.edu/student-resources/student-resources.aspx), in [Navigate](https://www.frederick.edu/navigate.aspx), and in Blackboard, and don’t be afraid to use them; they’re here to help.

FCC’s also committed to making sure all students can get the most out of our courses, including those with disabilities (including learning, attention, hearing, vision, psychological, chronic medical, and more) in need of accommodations. If you have an accommodation plan, be sure to share it and discuss your needs with your instructor. **Do this as soon as possible** - the accommodations don’t happen until the plan is shared with your instructor. If you’re not yet registered for a plan and/or want more information on accommodations, you can learn details, find contact information, and [request services](https://frederick-accommodate.symplicity.com/public_accommodation/) at [our website](https://www.frederick.edu/student-resources/das.aspx).

*(Click to* [*return to first page*](#_top)*)*

# **Core Learning Outcomes**

By successfully completing this course, you will be able to:

1. **Demonstrate AI Literacy and Communication Skills by:**

# Explaining fundamental AI concepts (machine learning, neural networks, large language models, generative AI) in clear, accessible language

# Crafting effective prompts to achieve desired outputs from various AI tools

# Documenting and presenting AI-assisted workflows and their outcomes

# **Apply Critical Evaluation Skills to AI Systems by:**

# Identifying hallucinations, biases, and inaccuracies in AI-generated content

# Evaluating the appropriateness of AI tools for specific tasks and contexts

# Distinguishing between AI-generated and human-created content

# Assessing the reliability and limitations of different AI platforms

# **Utilize AI Tools Effectively and Responsibly by:**

# Operating generative AI platforms for text, image, code, and data analysis tasks

# Integrating AI tools into personal and professional workflows appropriately

# Implementing proper citation and attribution for AI-assisted work

# Selecting appropriate AI tools based on task requirements and constraints

# **Analyze Ethical and Societal Implications of AI by:**

# Examining privacy, security, and data protection concerns in AI systems

# Evaluating the impact of AI on employment, creativity, and human agency

# Identifying and addressing bias in AI training data and outputs

# Applying ethical frameworks to AI adoption decisions

# **Demonstrate Professional AI Competency by:**

# Developing AI use policies and guidelines for workplace scenarios

# Creating AI-enhanced projects that maintain human oversight and accountability

# Collaborating effectively in human-AI partnerships

# Communicating AI capabilities and limitations to non-technical stakeholders

# **Additional Course Info**

This course can also satisfy these Gen Ed requirements (if two are listed, it can only satisfy one or the other):

|  |  |
| --- | --- |
| Gen Ed Type 1: N/A | Gen Ed Type 2: N/A |
| FCC Cultural Competence? No | |

*(Click to* [*return to first page*](#_top)*)*

# **What’s Getting Graded?**

|  |  |  |  |
| --- | --- | --- | --- |
| Assessment Type | Outcome(s) Being Assessed | Point Value | Description |
| AI Tool Labs | 1, 3, 5 | 200 | Weekly hands-on exercises using different AI platforms (text, image, code, data analysis) |
| Critical Analysis Assignments | 2, 4 | 150 | Evaluate AI outputs for accuracy, bias, and appropriateness; fact-check AI content; identify hallucinations |
| Discussion Boards | 1, 2, 4 | 100 | Weekly discussions on AI impact, ethics, and real-world applications |
| AI Ethics Case Studies | 4, 5 | 150 | Analyze 3 ethical scenarios involving AI use in workplace/society |
| Midterm Exam | 1, 2, 4 | 150 | Multiple choice and short answer on AI concepts, capabilities, limitations |
| AI Implementation Project | 1, 3, 5 | 150 | Design an AI integration plan for a real-world scenario with documentation |
| Final Portfolio & Presentation | All (1-5) | 100 | Showcase AI-enhanced work samples with reflection on learning |
| Total: |  | **1000** |  |

# **Final Grade Scale:** 900–1,000 = A • 800–899 = B • 700–799 = C • 600–699 = D • ≤599 = F

# **Participation Policy and Expectations**

*Note: Your instructors are required to report student attendance at the beginning of the session and no later than the day after the 100% refund date (you can find that later in the syllabus). FCC will not disburse Federal Student Aid to students until your instructor confirms your attendance.*

1. This is an online course delivered through Blackboard. Students are expected to participate fully in all instructional activities, discussions, and AI tool explorations.
2. You are required to sign onto this Blackboard Course site and check your email daily.
3. All assignments must be submitted via Blackboard to receive credit (Do Not Email or Print Assignments).
4. Assignments sent via email will NOT be graded and will not receive credit.
5. You MUST use Microsoft Word, Excel, PowerPoint for document submissions. AI-generated content must be properly documented with tool used and prompts provided.
6. All assignments must be submitted for credit; late assignments may receive a lower score.
7. AI Tool Labs are designed to be completed independently with instructor support via discussion boards. Students will typically have one week from assignment date to submit lab documentation.
8. Discussion Board participation is required - share your AI experiments, troubleshooting approaches, and ethical considerations with peers.
9. Students must maintain free accounts on required AI platforms throughout the course and document their experiences using different tools.
10. For all AI-assisted work, students must include an "AI Disclosure Statement" describing which tools were used, how they were used, and what was human-generated versus AI-generated.
11. Weekly reflection posts about AI tool experiences and ethical considerations are required via discussion boards.
12. At the end of the semester, you are required to complete an anonymous course evaluation via Blackboard.

**Additional Expectation for AI in Practice:** Given the rapidly evolving nature of AI technology, students are expected to stay current with AI developments through provided resources and share relevant findings with the class. Experimentation with AI tools is encouraged, but all use must comply with FCC's academic integrity policies and the ethical frameworks discussed in class.

|  |
| --- |
| **College-Wide Expectations**  As an FCC student, you’ll be expected to abide by the [Code of Student Conduct](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/code-of-student-conduct.aspx). Basically, we expect you to act with integrity, treat others with respect, and avoid plagiarism, cheating, and other academic dishonesty (visit the [link](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/code-of-student-conduct.aspx), page 7, to see some examples of what counts).  And you can expect to be treated honestly, fairly, and respectfully, as well. Your records will stay private (see our [FERPA protections](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/ferpa.aspx)), you’ll be free from discrimination in all we do, and you’ll always be empowered to participate and give honest feedback on your experiences. Thank you for helping make our FCC community one where everyone is able to thrive. |

# **Tracking How You’re Doing in the Course**

I will maintain grading information in Blackboard under the “My Grades” tab. Students are responsible for keeping track of this information. Likewise, I will provide feedback to the class on their work through Blackboard (“Feedback on Assignments” 🡪 “Feedback on Assignment X”). Students desiring additional/personalized feedback are required to make an appointment with me during my student hours so that we can discuss your work at length and work together to develop an actionable plan for your continued development and improvement. Typical turnaround times for short assignments (e.g., weekly assignments) is 3-5 business days; typical times for more intensive assignments is 7-10 business days.

Contacting Your Instructor

When you enrolled at FCC, you received a myFCC email address – be sure to [set up that email](https://myfcc.frederick.edu/portal.aspx) if you haven’t done so already. You’ll need to use that email when you’re communicating with your instructor or other FCC employees, and it’s the one they’ll use to contact you too. In addition to being listed [above](#_Welcome_to_[INSERT), you’ll also be able to find your instructor’s email in Blackboard. (Your classmates’ myFCC emails will be there as well.) You should expect your instructor to respond to regular email messages in about 1-2 business days.

**IMPORTANT:** All College email communication will use your myFCC email address, so be sure to check it often.

Final Grades

When your instructor submits your final grade, the Registrar's Office will post it in your PeopleSoft student account records. You can use that student account to see your grades, view your transcript, or request an official transcript anytime. The grades that appear in PeopleSoft—not the ones in Blackboard—are your official grades.

Thinking of Withdrawing?

If you’re considering [withdrawing from the course](https://www.frederick.edu/admissions/registration-records/withdrawal-advising.aspx), be sure to talk to your instructor, an advisor, and financial aid about it before you do! There are important deadlines that help determine what effect it might have on your transcript and whether you get a tuition refund. Withdrawing also doesn’t automatically stop you from being charged for the class; there are a lot of details that matter. Let us know your situation as soon as possible, and we can help ensure you’ve got all the information and support to make the best decision.

|  |  |
| --- | --- |
| **Last Day for 100% Refund:** 08/xx/20xx *The course will no longer appear on your transcript.* **Last Day for 50% Refund:** 09/xx/20xx *You’ll get a “W” on your transcript.* | **Last Day to Withdraw or Audit:** 10/xx/20xx *If you withdraw, you’ll get a “W;” if you audit, an “AU.”* |

# **How to Submit a Complaint**

If you have a negative experience, we’d love to learn more about what happened – feedback is an important part of making our courses better for everyone. Your first step should be reaching out to your instructor to try and resolve the issue. If you can’t find a solution with them, your next step is to contact the AVP/Dean of the School. Their contact information is:

|  |  |
| --- | --- |
| **Name:** Christianne Aranguren | **Role:** AVP/Dean, School of TTBH |
| **Email:** [caranguren@frederick.edu](mailto:caranguren@frederick.edu) | **Phone:** 240-624-2804 |
| **Office Room Number:** B225, Bradock Hall |  |

If you still can’t find a good solution, we also have an [official complaint process](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/complaint-policy-procedure-for-students.aspx) that’s open to all students. We also have a specific procedure if your complaint is [related to Title IX issues](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/titleix.aspx) (discrimination, harassment, etc. based on sex or gender), and another if your complaint is [related to discrimination for any other reason](https://www.frederick.edu/jobs-hr/policies-and-procedures/policyproceduredocuments/non-discrimination.aspx).

No matter what the result, thank you! We appreciate you taking the time to talk to us about the challenge.

*(Click to* [*return to first page*](#_top)*)*

# **How Much Time Should You Expect to Spend on this Course?**

|  |  |  |  |
| --- | --- | --- | --- |
| Out of Class Work Summary | Time Required (Estimate) | Frequency During Term | Total Out of Class Time (Estimate) |
| Assigned Readings & AI Platform Exploration | 2 Hours / Week | 15 | 30 Hours |
| AI Tool Labs | 2 Hours / Lab | 12 | 24 Hours |
| Critical Analysis Assignments | 2 Hours / Assignment | 5 | 10 Hours |
| Discussion Boards | 1 Hour / Week | 15 | 15 Hours |
| AI Ethics Case Studies | 4 Hours / Case Study | 3 | 12 Hours |
| Midterm Exam Prep & Completion | 4 Hours | 1 | 4 Hours |
| AI Implementation Project | 12 Hours | 1 | 12 Hours |
| Final Portfolio & Presentation | 10 Hours | 1 | 10 Hours |
| Weekly AI Experimentation & Documentation | 0.5 Hours / Week | 15 | 7.5 Hours |
| GRAND TOTAL: |  |  | **124.5 Hours ~8.3 Hours/Week** |

Note that these are *estimates*, the amount of time you need to spend on each item will vary based upon individual effects.

***Continued on Next Page***

# **Course Outline and Assignment Schedule:** What’s Happening and When?

Please know that your instructor may change this schedule if the need arises. If that happens, they’ll let you know what’s changing and why.

|  |  |  |  |
| --- | --- | --- | --- |
| WEEK | UNIT | TOPICS, READINGS, ASSIGNMENTS | DUE DATES |
| 1 | Unit 1 | **Introduction to AI Literacy** |  |
|  |  | Course overview & AI's role in society |  |
|  |  | Setting up free AI platform accounts (ChatGPT, Claude, Copilot, Gemini) |  |
|  |  | What is AI? ML vs AI vs AGI |  |
|  |  | Understanding AI as a tool, not magic |  |
|  |  | CLASS ASSIGNMENTS - Lab 1: First conversations with different AI platforms |  |
|  |  | DISCUSSION BOARDS - Your current AI experience and concerns | Start: 9/9 |
|  |  |  | Lab 1 due: 9/15 |
| 2 | Unit 2 | **How AI Works: Demystifying the Black Box** |  |
|  |  | Neural networks in plain language |  |
|  |  | Training data and pattern recognition |  |
|  |  | Why AI makes mistakes: hallucinations explained |  |
|  |  | CLASS ASSIGNMENTS - Lab 2: Testing AI knowledge boundaries |  |
|  |  | CRITICAL ANALYSIS 1 - Fact-checking AI responses |  |
|  |  | DISCUSSION BOARDS - AI capabilities and limitations | Due: 9/22 |
| 3 | Unit 3 | **Prompt Engineering Fundamentals** |  |
|  |  | Crafting effective prompts |  |
|  |  | Context, constraints, and clarity |  |
|  |  | Iterative refinement techniques |  |
|  |  | CLASS ASSIGNMENTS - Lab 3: Prompt engineering challenges |  |
|  |  | DISCUSSION BOARDS - Sharing successful prompt strategies | Due: 9/29 |
| 4 | Unit 4 | **Text Generation & Large Language Models** |  |
|  |  | ChatGPT, Claude, Gemini capabilities |  |
|  |  | Use cases: writing, analysis, coding assistance |  |
|  |  | Citation and attribution requirements |  |
|  |  | CLASS ASSIGNMENTS - Lab 4: Professional writing with AI assistance |  |
|  |  | ETHICS CASE STUDY 1 - Academic integrity and AI |  |
|  |  | DISCUSSION BOARDS - AI in education and work | Due: 10/6 |
| 5 | Unit 5 | **AI for Visual Content** |  |
|  |  | Image generation tools (DALL-E, Midjourney, Stable Diffusion) |  |
|  |  | Understanding image prompts |  |
|  |  | Copyright and ownership issues |  |
|  |  | CLASS ASSIGNMENTS - Lab 5: Creating visual content with AI |  |
|  |  | DISCUSSION BOARDS - AI art and human creativity | Due: 10/13 |
| 6 | Unit 6 | **AI for Data and Analysis** |  |
|  |  | AI-powered data analysis tools |  |
|  |  | Code generation and debugging |  |
|  |  | Spreadsheet and presentation assistance |  |
|  |  | CLASS ASSIGNMENTS - Lab 6: Data analysis with AI support |  |
|  |  | CRITICAL ANALYSIS 2 - Evaluating AI-generated data insights | Due: 10/20 |
| 7 | Unit 7 | **Identifying AI-Generated Content** |  |
|  |  | Detection techniques and tools |  |
|  |  | Deepfakes and synthetic media |  |
|  |  | Digital literacy in the AI age |  |
|  |  | CLASS ASSIGNMENTS - Lab 7: AI content detection workshop |  |
|  |  | DISCUSSION BOARDS - Trust in digital media | Due: 10/27 |
| 8 | Unit 8 | **Midterm Week** |  |
|  |  | Review of Units 1-7 |  |
|  |  | MIDTERM EXAM |  |
|  |  | AI Implementation Project introduction |  |
|  |  | PROJECT - Select topic and scope | Midterm: 11/3 |
| 9 | Unit 9 | **AI Bias and Fairness** |  |
|  |  | Understanding algorithmic bias |  |
|  |  | Training data and representation |  |
|  |  | Mitigation strategies |  |
|  |  | CLASS ASSIGNMENTS - Lab 8: Bias detection exercises |  |
|  |  | ETHICS CASE STUDY 2 - AI in hiring and criminal justice |  |
|  |  | DISCUSSION BOARDS - Ensuring fairness in AI systems | Due: 11/10 |
| 10 | Unit 10 | **Privacy and Security with AI** |  |
|  |  | Data collection and usage |  |
|  |  | Protecting personal information |  |
|  |  | Corporate AI policies |  |
|  |  | CLASS ASSIGNMENTS - Lab 9: Privacy audit of AI tools |  |
|  |  | CRITICAL ANALYSIS 3 - Terms of service analysis | Due: 11/17 |
| 11 | Unit 11 | **AI in the Workplace** |  |
|  |  | Automation and job displacement |  |
|  |  | Human-AI collaboration |  |
|  |  | Upskilling strategies |  |
|  |  | CLASS ASSIGNMENTS - Lab 10: Workflow automation with AI |  |
|  |  | DISCUSSION BOARDS - Future of work | Due: 11/24 |
|  |  | **Thanksgiving Break (11/24-11/30) - No Assignments** |  |
| 12 | Unit 12 | **Professional AI Implementation** |  |
|  |  | Developing AI use policies |  |
|  |  | Change management |  |
|  |  | ROI and productivity metrics |  |
|  |  | CLASS ASSIGNMENTS - Lab 11: Creating an AI implementation plan |  |
|  |  | PROJECT WORK WEEK | Due: 12/1 |
| 13 | Unit 13 | **AI Ethics Frameworks** |  |
|  |  | Responsible AI principles |  |
|  |  | Global AI governance |  |
|  |  | Future regulations |  |
|  |  | CLASS ASSIGNMENTS - Lab 12: Ethical decision-making scenarios |  |
|  |  | ETHICS CASE STUDY 3 - Autonomous systems and accountability | Due: 12/8 |
| 14 | Unit 14 | **Emerging AI Technologies** |  |
|  |  | Multimodal AI and agents |  |
|  |  | AI consciousness debates |  |
|  |  | Preparing for AGI |  |
|  |  | DISCUSSION BOARDS - AI predictions for 2030 |  |
|  |  | AI IMPLEMENTATION PROJECT DUE | Project Due: 12/13 |
| 15 | Unit 15 | **Course Synthesis & Future Directions** |  |
|  |  | Portfolio preparation |  |
|  |  | Final presentations |  |
|  |  | Course evaluation |  |
|  |  | FINAL PORTFOLIO & PRESENTATION DUE | Portfolio Due: 12/20 |

Note 1: This is a living document and subject to update as needed at the discretion of the professor to meet the needs of our learning community.

Note 2: If you feel that you are struggling, it is up to you to take advantage of the support resources made available to you (e.g., STEM Lab, Student Hours, etc.). You need to do so in a timely manner. My ability to effectively support you diminishes the closer we get to the end of term.

|  |  |
| --- | --- |
| **Important Date(s)** | **Description** |
| TBD | On-Campus Emergency Drills - see Drill Schedule for type of drill and time |
| TBD | College Holidays/Breaks with no Classes |
| TBD | Last Date to Drop with a 100% refund |
| TBD | Last Date to Withdraw with a 50% refund |
| TBD | Last Date to Withdraw/Audit the Course |
| TBD | Course Evaluation Dates |

*(Click to* [*return to first page*](#_top)*)*