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Building AI literacy for faculty with a semester-long hybrid course

Dan R. Bradbury, *Western Carolina University*, dbradbury@wcu.edu

Christine Madonna Kirkland, *Western Carolina University*, ckirkland@wcu.edu

Barbara Jo White, *Western Carolina University*, whiteb@wcu.edu

AJ Grube, *Western Carolina University*, agrube@wcu.edu

Abstract

Companies are educating their own employees to increase their AI literacy skills and looking to hire recent graduates who are AI literate as well. Colleges of business, then, must in turn, increase faculty AI literacy in order to produce industry-acceptable graduates. Many faculty development efforts with AI sessions and workshops include AI ethics as well as a focus on AI in the classroom. This paper defines AI literacy, presents factors to consider when designing AI literacy activities for faculty, and describes the development of a higher-level semester-long course that focuses on AI theory, agents and retrieval augmented generation (RAG) especially when used with deep research applications. Finally, the paper discusses changes to the course during the semester in response to faculty feedback and lessons learned. Originally, the last third of the course was to include AI application development but faculty from multiple disciplines balked at learning Python to develop applications. The seminar pivoted to focus on developing research and pedagogical agents with a focus on developing pedagogical applications. Given the varying level of technical proficiency among faculty, the course will continue with modifications in the next academic year.

Keywords: AI Literacy, AI Workshops, Faculty Development, AI Agents, Formative Assessment

Introduction

AI literacy is the top skill that employers are looking for (Picchi, 2026). Universities, and in particular, colleges of business, must rise to this challenge and provide students with the AI literacy skills they will need in the workforce. Specifically, graduating students with real-world skill sets that are valuable to the workforce is a key function of higher education. Demonstrating this is all the more necessary, given that the necessity and value of higher education are increasingly a matter of public debate. A recent poll (Kamisar, 2025) found that two-thirds of Americans question the value of a university education.

One challenge of the objective of equipping students with valuable skill sets, however, is keeping university faculty up to date with emerging technologies. A recent survey of faculty in higher education (Coffey, 2026) found that just over two-thirds report not being prepared to use AI in working with students or for their own research and scholarship. This lag in faculty technological skills contributes to universities' lack of agility and, thus, to the lack of public confidence in institutions of higher education.

Given the rapid emergence of AI, some universities are currently implementing AI training workshops for faculty and staff. Few of these faculty development endeavors treat AI and other transformational

technologies as continuing education, so that faculty are not just educational consumers but instead possess sufficient understanding to be competent instructors and researchers. Such an approach is distinguished from use-case demonstrations of AI and, instead, prioritizes bringing faculty up to speed on how AI works, how to move beyond consumer products to deep research applications, and even how to develop AI applications. Given the increased depth and required commitments, the present work describes the range of factors that had to be considered and then describes the semester-long course offered primarily to the College of Business (CoB) faculty to increase AI literacy. Faculty feedback is also described, and lessons learned are discussed.

Background and Literature Review

AI Literacy in the Workplace

Definitions of AI Literacy and Its Components

There is a variety of definitions for AI literacy and its components. For example, AI literacy, according to Long and Magerko (2020), is “a set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace” (Long & Magerko, 2020, p. 2). The set of competencies that Long and Magerko (2020) identify belongs to five overarching themes that address what AI is and does, how AI works and should be used, and how AI is perceived.

More recently, the U.S. Department of Labor developed an AI literacy framework and defined AI literacy “as a foundational set of competencies that enable individuals to use and evaluate AI technologies responsibly, with a primary focus on generative AI, which is increasingly central to the modern workplace” (U.S. Department of Labor [DOL], 2026, p. 1). The DOL places an additional emphasis on generative AI as a major component of AI literacy. The DOL AI Literacy Framework identifies five foundational areas of AI literacy: understanding AI principles, exploring uses of AI, directing AI, evaluating AI outputs, and responsibly using AI.

Meanwhile, a more detailed definition, according to Gartner, an IT research firm, is that

AI literacy is the ability to effectively and responsibly utilize AI in context (business and societal). This includes role-based knowledge about its implications, risks, and resulting values and outcomes. It includes understanding the fundamental principles of AI, technology and applications, analytical and algorithmic methods, data and knowledge sources, and ethical considerations (D'Hoinne et al., 2025, p. 60).

In keeping with this definition but in a more narrow area of generative AI, Gartner identifies four major skill sets: use case identification, GenAI tech fluency, effective prompting, and output discernment as skills employees need to master (Paulman et al., 2025). All of these definitions of AI literacy, along with their skill sets (Paulman et al., 2025), accompanying themes and competencies (Long & Magerko, 2020), and foundational areas (DOL, 2026), include an emphasis on understanding AI, knowing when to use AI, using AI effectively, and evaluating AI outcomes.

Workplace AI Literacy Programs

Building an AI-literate workforce means creating an organizational structure that allows for “continuous AI literacy learning and measurement; proactive upskilling through ongoing learning initiatives” (Sicular & den Hamer, 2025, p. 3). Continuous AI learning is critical to overcoming the Ebbinghaus forgetting curve, whereby people forget 50% of the new skills they learn after an hour, 70% after a day, and 90% after a week (Paulman et al., 2025).

Continuous learning was central to an AI literacy program implemented by an Australian law firm, in which AI learning counted toward billable hours, and employees who completed AI modules and applied AI in practical ways earned rewards (Mullery et al., 2025). In an effort to move employees from avoiding to understanding, exploring, adopting, and finally championing AI, the CIO and Chief HR Officer worked together to offer AI learning modules and activities that could be done alone, interactively with others or a team, and even some activities that could be done on a commute (Gartner, 2025).

Consulting firms like PwC, KPMG, and Accenture are training their employees because AI consulting is big business (Wheeler, 2025). PwC first engaged 350 non-technical employees from the GenAI Super User Network to serve as peer role models focused on optimizing daily tasks (Burleigh, 2024). More recently, PwC rolled out the Learning Collective, featuring a 30-skill set (15 Human skills + 15 AI skills) that is taught in tandem (Nawrat, 2026). KPMG has a mandatory GenAI 101 training program with an AI ethics component. Meanwhile, after training 500,000 employees to use GenAI, Accenture began training 700,000 employees on Agentic AI, autonomous agents that can operate independently. Many of these corporate AI literacy training sessions employ gamification and rewards.

Faculty AI Literacy Programs: Factors to Consider

Given that universities prepare students for the workforce, there is a need for AI literacy programs for faculty. The American Association of University Professors (2025) recognized that universities need to provide AI-related professional development opportunities and to do so in an ongoing manner. Means (2026) further identified faculty development as a critical success factor and one of eight critical themes for AI in business education. Specifically, she states in the recent Inspire Higher Ed report created with support from the Association to Advance Collegiate Schools of Business (AACSB):

The transformation of business education through AI cannot succeed without comprehensive faculty development. While institutional leadership can create structures and allocate resources, actual integration happens in individual classrooms led by individual faculty members. Faculty face competing demands, varying technical confidence, and legitimate concerns about how AI changes their role. Without thoughtful support, these concerns create resistance that stalls progress. Conversely, when schools invest comprehensively, providing not just one-time training but ongoing support, peer communities, and meaningful incentives, they create conditions for rapid, sustainable transformation (Means, 2026, p. 36)

Beyond the importance of AI for faculty professional development, there are a variety of factors to consider when planning the AI literacy program or sessions. We discuss content, delivery, and other important factors to consider below.

AI Content

Workshops typically begin by establishing a baseline understanding of how AI works, covering topics such as the history of AI, basic machine learning, and the distinctions among general, narrow, and generative AI (Koraishi, 2025). A critical component of this foundational training involves exploring AI's technical limitations, with a particular focus on data training biases and the phenomenon of AI “hallucinations” (Schallert-Vallaster et al., 2025).

Prompt engineering is frequently taught as a core literacy skill essential for educators (Chen et al., 2025). Workshops often teach specific frameworks for crafting effective inputs to guide AI tools toward useful and accurate outputs (Aftab et al., 2026; Koraishi, 2025). Rather than presenting AI as a rigid technical process, many facilitators encourage a sandbox approach, using playful, low-stakes activities that help

faculty organically discover how large language models (LLMs) interpret language, handle ambiguity, and sometimes fail (Fischer, 2026).

A major focus of these workshops is adapting traditional assignments to the AI era. Educators are trained to design AI-resistant or authentic assessments that prioritize complex, context-rich problem-solving that AI cannot easily replicate (Awadallah Alkhouk & Khlaif, 2024). Workshops frequently introduce the Process-Product Assessment Model, which shifts the grading focus away from the final submitted product alone to the ongoing human-AI interaction, including how well students formulate prompts and refine AI-generated ideas. Additionally, faculty learn how to utilize AI to generate diverse exam materials and adaptive quizzes (Aftab et al., 2026; Kizilcec et al., 2025).

Ethical considerations form the backbone of nearly all AI faculty development. Content addresses fairness, data privacy, and Human-in-the-Loop systems, ensuring that educators understand their role in overseeing AI-driven tools (Kizilcec et al., 2025). Workshops explicitly address academic integrity by guiding faculty in drafting course-specific AI policies and in educating faculty about the limitations and fallibility of current AI detection software (Awadallah Alkhouk & Khlaif, 2024; Zimmer, 2026).

AI Content Facilitator

Many AI literacy workshops are designed and delivered directly by researchers and authors conducting AI integration studies (Awadallah Alkhouk & Khlaif, 2024). In these instances, a researcher often serves as the primary facilitator to test their content frameworks and gather empirical data on educators' responses to the training (Koraishi, 2025).

Comprehensive programs, such as multi-week cohorts, are often coordinated by groups of facilitators with varied institutional roles and expertise (Chen et al., 2025). These teams typically consist of individuals with specialized backgrounds in pedagogy, educational technology, research, and program management. Rather than delivering traditional lectures, these facilitators focus on organizing content, providing resources, and moderating peer discussions.

In some organizations, AI training initiatives and resource sites are developed collaboratively by volunteer strategy groups comprising faculty, staff members, and administrators (Zimmer, 2026). This community-driven approach intentionally brings together diverse disciplinary perspectives, ranging from pedagogical enthusiasm to ethical skepticism, ensuring that the training is participatory and reflective of the institution's specific culture. Larger symposia and conference-aligned workshops rely on program committees, panels, and presentations delivered by a wide array of specialists (Kizilcec et al., 2025).

Lastly, instructors themselves frequently facilitate these sessions for their peers (Fischer, 2026). Rather than presenting themselves as definitive technical experts, these peer facilitators focus on observing group dynamics, asking guiding questions, and cultivating a safe, low-stakes environment for collective meaning-making and shared experimentation.

AI Content Length and Format

AI faculty development workshops exhibit significant variation in their scheduling and time commitments, ranging from brief interventions to extended cohort programs. Some institutions employ a microlearning model, such as a 12-week asynchronous "Prompt Challenge" in which faculty receive weekly email prompts that take less than 4 minutes to complete and are supported by a community discussion board (Park et al., 2026). Others offer short, intensive sessions, such as half-day conference workshops or single full-day, six-hour training events (Kizilcec et al., 2025; Koraishi, 2025). More comprehensive approaches utilize a multi-week cohort structure, such as an "AI Academy" consisting of five sessions over eight weeks, or a

blended “TSED” (Tell, Show, Enact, Do) model that combines eight hours of online self-study with face-to-face meetings and a months-long classroom trial phase (Schallert-Vallaster et al., 2025).

AI Content Modality

The delivery of these programs spans fully in-person sessions, entirely virtual formats via Zoom, and highly flexible hybrid models (Awadallah Alkouk & Khlaif, 2024). Some programs utilize a hybrid-flexible design that allows participants to choose among attending in person, joining synchronously online, or engaging asynchronously, while still achieving the same learning outcomes (Chen et al., 2025).

Faculty Participation

Participation in these AI faculty development workshops is consistently described as voluntary rather than required (Aftab et al., 2026; Koraishi, 2025; Schallert-Vallaster et al., 2025). Often, there is no formal institutional mandate to enforce attendance; instead, workshops may emerge as a grassroots response to educators' collective curiosity and unease (Fischer, 2026). Typically, organizers issue broad calls to university faculty or advertise the training on social media, allowing interested educators to sign up on their own initiative (Aftab et al., 2026; Koraishi, 2025). Furthermore, faculty frequently participate in these initiatives without any financial incentives (Park et al., 2026).

Development and Delivery of a Semester-Long AI Course for College of Business Faculty

The above factors, which included content, facilitator, length, format, modality, and participation, were taken into consideration as a semester-long AI seminar for business faculty was developed. In addition, delivery, faculty feedback, and course revision are described.

Planning Stage

Format, Content, and Modality

A faculty member with industry experience in AI development was encouraged by a colleague to meet with the dean during the first week of the academic year. This initial, informal discussion focused on what ‘faculty AI education should look like’ and went beyond the scope of a traditional, university-sponsored workshop. As such, a follow-up meeting between the experienced faculty member and the dean was initiated. At the meeting, topics that were discussed included length (whether the course ought to be a full, semester-long endeavor, a short series, or an intensive workshop), hypothetical resource requirements (tools and required subscriptions the faculty would need for hands-on training), course modality (in-person, remote, hybrid, synchronous vs asynchronous), and the number of available seats.

It was agreed upon that the likely best structure to educate faculty on how to effectively utilize AI in their teaching, research, and service would be to follow the format of a multi-week seminar, such that the expectation would assume a high degree of intrinsic motivation to develop AI as a competitive skillset, on par with practitioners and other researchers. Such a skill set would go beyond viewing AI as a ‘consumer tool’ and instead treat it as something to customize and develop for unique research, teaching, and service needs. The faculty member agreed to teach the seminar and, at the dean’s request, drafted a loose syllabus for the course, including a list of planned topics, estimated lengths, and estimated costs of required tools.

The faculty member then conducted extensive research on how to gradually develop faculty with no prior experience in AI into productive, AI-capable researchers and instructors, so they would be prepared to use generative AI for data analysis, coding, and even model hosting. Following this research, the faculty member determined that, at the time, the Google ecosystem was most advantageous to cover the breadth of topics needed as the one subscription price included advanced, multimodal LLMs (gemini 3 at the time),

video generation (Veo), complex RAG tools (such as notebookLM and custom gems), coding copilot assistants (in Google colab), and rentable GPU credits for model hosting and training.

Initial discussions with the dean revealed that the best format for the course would be a mix of in-person and online meetings, with the ultimate goal of maximizing faculty attention and participation. Both the possibilities of fully in-person and fully online were discussed, but each had trade-offs. A fully in-person course would likely lead to frequent faculty absences due to conference travel, committee meetings, and other scheduling conflicts. The dean suggested that, conversely, a fully online course could lead to low engagement and passivity, undermining the purpose of the incentives and the significant expense incurred.

Budget

The budget for the course tools, instructor compensation, and faculty participant stipend was developed. A variety of factors were considered for instructor compensation. Chiefly, the course could be offered in-load or as an overload. For an in-load course, student enrollment must be considered to determine whether the College of Business can afford to release a faculty member or hire an adjunct. Offering the course as an overload brings its own considerations. Often, it is not advisable for untenured faculty to offer overload courses, though that depends on the department head and the instructor. If the instructor is tenured, the question is whether that instructor would be willing to teach a course to faculty at the overload price typically paid by the university. Ultimately, an untenured faculty member taught the course in-load, as the department was able to absorb the assignment without hiring an adjunct. A variety of resources and tools were used in the course, including paid tools such as Google AI Pro and free tools such as Ollama/LM Studio, Google Colab, and DataCamp. These costs and a \$500 stipend per faculty participant were paid from state funds and two endowed professorships.

Faculty Participation

Upon receiving the tentative course syllabus early in the academic year, the dean emailed faculty, attaching the syllabus and asking them to indicate whether they would commit to participating in the 12-week seminar. The dean mentioned that the estimated course cost of \$175/per person would be covered by the College of Business and that there were 10 spots available. Further, the dean also offered a \$500 stipend to faculty who successfully completed the full course. By the end of the day of the initial email, 17 faculty members had expressed interest in the course. Within a week, the number of interested faculty grew to 22, and colleges outside the CoB also caught wind of the course and requested to participate. Because of the high demand and quick response rate, the dean and the faculty seminar organizer agreed to increase the number of seats to 25 faculty members. Three members of the College of Arts and Sciences' faculty participated and were funded by their college, along with the initial 22 CoB faculty members who expressed interest within the first week of the interest email. By the end of the semester, interest had grown to over 50 requests, including additional interest from faculty outside the College of Business.

Course Delivery Stage

Course Format, Modality, and Frameworks

The course was designed as a 12-week hybrid course. Faculty were set to meet face-to-face on Friday afternoons and generally alternate with web-based, synchronous meetings. The course was designed as an inverted flipped classroom (Bishop & Verleger, 2013), with readings and video content for faculty participants to cover outside of class. The intended goal of class time was to be held in a 'workshop' format, specifically to demonstrate a given application or AI-based tool, respond to inquiries, and have the faculty participants replicate the application and apply it to their own use cases. The one exception to this was the first day of the course, wherein the seminar's faculty facilitator presented a more conceptual overview of what AI is and how it works, which is typical of faculty AI workshops (Koraishi, 2025), and what to expect from the course.

In addition to the flipped classroom framework, elements of the Formative Assessment Framework (Black & Wiliam, 2009) were evident throughout the course. The five strategies of the framework include the following: 1) clarifying learner intentions; 2) engineering tasks to elicit student understanding; 3) providing feedback that moves learners forward; 4) activating students as peer resources; and 5) activating students as owners of their learning. These five strategies are illustrated in the Course Content Delivery and Course Survey and Revision areas below.

Course Content Delivery

The initial course content was designed around a "theory over tools" philosophy, focusing on the underlying mechanics of AI (such as RAG and vector databases) so that faculty could adapt to any commercial landscape. The goal of the seminar was to equip faculty at a research-active institution to be knowledgeable and competent in preparing college students to enter the workforce with AI-based skill sets and to enable them to enhance their research with customized AI applications. This included utilizing local models to handle sensitive data, utilizing programmatic API access to analyze complex sets of unstructured data, and understanding prompting and orchestration techniques to maximize accuracy and automation potential. The curriculum was initially built to gradually introduce faculty to foundational topics, such as how AI 'works' and move to programmatic capabilities such as API utilization and fine-tuning. Further, the three core pillars of a faculty member's role were considered in selecting and framing such use cases: Teaching (deploying custom models and agents), Research (using APIs and agentic workflows to synthesize the literature or analyze data), and Service (streamlining administrative overhead). Initially, the syllabus progressed aggressively from foundational knowledge to deep research, local AI deployment, Python catch-up, and fine-tuning. The initial course syllabus is in the Appendix in Table 1.

During face-to-face interactions, faculty often arrived a few minutes early to gather with other participants in groups of two or three to discuss what they found interesting in the readings or videos, what skills they were looking forward to, and what they thought they could adapt for their classes. During online interactions, the course facilitator would often open by eliciting comments from faculty. These interactions served to clarify learner intentions.

In the face-to-face meetings, faculty typically sat in the same seats. This self-selected seating arrangement facilitated the activation of faculty as peer resources for each other. This was especially true following a skill demonstration by the facilitator that faculty participants were to replicate using various AI tools. Anecdotal observations suggest that faculty participants who could have chosen a variety of data to work with often chose the same data so that they could work together, helping each other each step of the way.

The flipped classroom approach, with faculty participants watching videos and reading articles outside of class, offered one opportunity for faculty participants to own their own learning. Another opportunity for faculty participants to own their own learning involved the use of DataCamp learning activities, whereby faculty participants learned Python in an interactive format, earning points along the way.

Face-to-face and online course meetings offered the course facilitator an opportunity to demonstrate criteria for success through tool use demos and offered faculty, as students, opportunities to share their learning intentions, serve as peer resources for each other, and own their own learning chiefly through out-of-class activities. These opportunities embody strategy 1 (clarify learning intentions and criteria for success), strategy 4 (activate students as instructional resources for each other) and strategy 5 (activate students as owners of their own learning) of Black and Wiliam's (2009) Formative Assessment Framework. The other two strategies associated with the framework, strategy 2 (engineer a task to elicit student understanding) and strategy 3 (provide feedback that moves learners forward), are demonstrated below.

Course Survey and Revision

After several DataCamp Python courses and before the section on fine-tuning models, some faculty expressed reservations about the content. Midway through the semester (around spring break), a "temperature check" evaluation consisting of five short questions was administered via an anonymous, optional course survey. Of the 25 seminar participants, 16 responded to the survey, with 56% reporting that the pace was too fast. The qualitative feedback revealed that the majority of faculty felt "overwhelmed," "humbled," and "challenged" by the pace of learning, particularly following a two-week crash course in Python and AI development. While the introduction to Python on DataCamp was mentioned in the survey as a "helpful structured supplement", not all faculty signed up for or completed the DataCamp modules. This faculty participant survey demonstrated how strategy 2 (engineering tasks to elicit student understanding) from Black and Wiliam's Formative Assessment Framework (2009) was implemented in the faculty AI literacy seminar.

In response to the faculty survey, the course facilitator executed a strategic pivot. Requirements to complete the additional Python coding modules and fine-tuning models were removed, and the course focus shifted toward high-engagement, hands-on consumer tools and demos. The revised curriculum placed greater emphasis on and revisited tools such as NotebookLM, Gemini Gems, and LM Studio. Application exercises were adapted to directly serve immediate faculty needs, such as creating custom "TA" gems, presentation tools for teaching, and utilizing AI-driven synthesis for research. The strategic pivot, which illustrated strategy 3 (provide feedback that moves learners forward) of the Formative Assessment Framework (Black & Wiliam, 2009), showed how the facilitator used the curriculum itself as feedback in response to the faculty survey. The revised curriculum acknowledged faculty understanding of the material and responded with feedback that moved learners forward by revising the curriculum to include tasks that better met learner intentions. After the pivot, faculty anecdotally expressed relief at the new activities and pace, and engagement appeared to pick up again. The course concluded shortly thereafter.

Lessons Learned

This semester-long AI literacy seminar highlights the tension in faculty development: the desire to provide deep technical competence while maintaining accessibility for scholars with diverse backgrounds and time constraints. Most of the faculty AI workshops described in the literature aimed to provide exposure, whereas this seminar intentionally operated at a higher level, with the expectation that participants would understand how AI works, how it is applied in research applications, and how faculty can develop their own AI applications, often involving Python. However, the rigor of this seminar was both a strength and a challenge.

Some faculty resisted the introduction of Python and more advanced model fine-tuning, and by mid-semester, they no longer completed the required work before class. The facilitator then pivoted the seminar toward pedagogical applications for the final third of the class. Faculty responded positively to this change, with attrition peaking mid-semester. Subsequently, the next iteration of the course is pivoting to focus more on the conceptual underpinnings of how AI works, end-user applications, and no-code solutions, as opposed to advanced coding and fine-tuning applications.

This first seminar also reinforced the value of Black and Wiliam's (2009) Formative Assessment Framework, which proved useful in a faculty development setting. There were opportunities for faculty participants to share learning goals, serve as peer resources for each other, and take ownership of their own learning. In addition, survey-based feedback helped the facilitator gauge participant understanding. Most importantly, the survey revealed that the pace and technical complexity of the seminar, especially with respect to Python-based AI model fine-tuning, did not align with participants' learning intentions and needs.

Using that survey feedback to revise the curriculum demonstrated how formative assessment can guide course pivots that better support learning moving forward. For future faculty AI literacy seminars, more frequent formative assessment through surveys and other means of feedback will help ensure that technical content matches faculty readiness and needs.

Other institutions of higher education can adapt this model to fit their faculty needs, resource constraints, and strategic goals. Regardless of the AI content, delivery format, or modality, faculty participant feedback during the AI literacy program and curriculum flexibility appear to be important factors in supporting faculty AI learning and engagement.

From a Dean's perspective, faculty support and development are immensely important. While keeping faculty current benefits students, it also motivates and challenges faculty. AI is reshaping both what faculty teach and how students learn. According to the research conducted with support from the AACSB, "the faculty development evidence is unambiguous: comprehensive, ongoing support determines success" (Means, 2026, p. 79).

Limitations and Future Research

This is the first time this seminar has been offered to faculty. Instructors have all had the experience of teaching a new course or course material for the first time, and know that it takes several semesters to become comfortable delivering their material and understanding how the audience responds to it and to class activities. However, we have rarely experienced content changing so rapidly. As of spring 2026, there have been only seven semesters since ChatGPT first appeared on the scene in November, 2022. In that short time span, the time it would have taken a college freshman to arrive at a university in fall 2022 and graduate in the spring of 2026, AI moved from an emphasis on prompt engineering in 2023 to Retrieval Augmented Generation in 2024 to Agentic AI in 2025 to embedded intelligence in 2026. Content is changing so quickly that it would be difficult to conduct a longitudinal study of this in-depth seminar on AI, which is an important limitation of this study.

This seminar was therefore valuable to the participants and shows that graduate-level AI faculty development is possible. This seminar is planned to continue in fall 2026, with participants already signed up. For future seminars, we anticipate a more balanced approach to deep research, pedagogical integration, and the development of pedagogical applications.

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Appendix

Table 1. Initial Faculty AI-Course 12-Week Syllabus Schedule

Day	Theme	Concepts	Potential Tools	Workshop Activity	What To Do Before Class
Week 1 live	Foundations	How AI 'works'	Articles / Papers	Presentation, Q&A	
Week 2 live	Deep Research	RAG & Synthesis	Perplexity, Elicit, NotebookLM	Conduct a fresh literature review & then synthesize	Read assigned towards data science articles
Week 3 online	Agents	What are 'agents' and how to use them	Any commercial front-end	Create & deploy your own agent	Read assigned articles
Week 4 live	Privacy & Local AI	Quantization & Edge Inference	LM Studio, Ollama, Hugging Face	Find & run your own 'personal,' open-source LLM	Assigned articles download LM Studio
Week 5 online	Python Catchup	Cloud Computing & Notebook Environments	Google Colab, Codespaces, Lightning AI	Access a cloud IDE and import a dataset	DataCamp: Intro to python ch1&2
Week 6 online	Agents II	How to use coding agents to accomplish anything	Colab, Cursor, Antigravity, VS Code	Analyze a public dataset starting from 0	DataCamp: Working with the OpenAI API
Week 7 online	API Connectors	APIs & Programmatic Access	Any python environment	Use an API to analyze textual data	DC: Working with the OpenAI API
Week 8 online	Data Engineering	Programmatic Data Cleaning	Cursor, VS Code, Google Colab	Use an API to restructure data	none
Week 9 live	Data Strategy	Structured Data (JSONL)	Python notebook, Excel	Prep a dataset for fine-tuning	DataCamp: Fine-tuning w/ollama 3 pt1
Week 10 live	Fine-Tuning I	LoRA (Parameter-Efficient Fine-Tuning)	Lightning AI, Colab, Vertex/Bedrock/Azure	Fine-tune a small model and run pre/post tests	DataCamp: Fine-tuning pt2
Week 11 online	Agents III	Workflow Orchestration	n8n, Zapier, Opal	Create an agentic workflow	Assigned video
Week 12 live	Future Strategy	Application	all of the above & more	Show-off your AI product	Create your own AI solution