

Faculty Guide and Rubric for UF Quality Enhancement Plan

The UF QEP Task Force
Assessment Subcommittee & Office of Institutional
Assessment (OIA)

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UF AI Across the Curriculum Quality Enhancement Plan (QEP)

FACULTY AI ASSESSMENT GUIDE

UF AI Across the Curriculum: 2024-2029 QEP

Artificial Intelligence (AI) Across the Curriculum is a five-year Quality Enhancement Plan (QEP) focused on providing students with the resources and skills to become successful digital citizens and global collaborators (Zimmerman, 2018). This QEP will create campus wide opportunities and experiences for exploring AI, considering AI awareness and general knowledge, AI application and use in different disciplines, and AI foundational development and expertise. Many disciplines have been conducting AI programs at the University of Florida for years, however recent interest in its broader applications and transformational donor support has created a university-wide initiative focused on AI. Thus, a terrific opportunity exists to create an organizational structure and intentional processes to foster AI in the curriculum and other complementary academic programs.

UF AI Across the Curriculum Model

The foundation of the UF model is based on AI literacies as outlined by Ng et al., (2021). Ng et al. (2021) presented four literacy topics: 1) know and understand AI, 2) use and apply AI, 3) evaluate and create AI, and 4) AI ethics. These four core AI literacies are used to show the type of knowledge and skills students are gaining through learning experiences. For example, to "know and understand AI", students need to be able to explain what AI is and its potential implications. To "use and apply AI", students need to be able to use AI tools for problem-solving. To "evaluate and create AI", students need to be able to assess the impact of AI and create new AI applications. Finally, to be AI literate, students need to understand the ethical implications of AI or "AI ethics" (Borenstein & Howard, 2021; Dai et al., 2020; Kandlhofer et al., 2016; Long & Magerko, 2020; Ng et al., 2021; Zimmerman, 2018). A fifth category, "AI Enabled", was also identified to capture academic courses that support AI through related knowledge and skill development and/or contain a lower total AI content of one of the four core AI literacy topics.

The five AI literacy categories align with a variety of knowledge and skills that students can learn through different types of experiences. For example, students might learn about AI through reading texts, watching videos, or attending lectures. Alternatively, students might learn about AI through hands-on experiences, such as coding projects or data analysis. The UF model is designed to first clarify the different AI literacy categories presented in different academic activities (Dai et al., 2020; Kandlhofer et al., 2016; Long & Magerko, 2020; Ng et al., 2021). This allows students to build their expertise by selecting courses focused on literacies of their interest. Second, the UF model provides students with identified AI literacy categories by course that can be packaged to showcase student AI skills and 21st century competencies (Buckingham Shum & Deakin Crick, 2016; Cantú-Ortiz et al., 2020; Ng et al., 2021). Lastly, the AI course designation approach allows review of course offerings to identify gaps or needs to ensure AI learning opportunities are available for all undergraduate students. The five literacy categories are further described as:

- Know & Understand AI
 - o Know the basic functions of AI and to use AI applications
 - o AI course content is over 50%
- Use & Apply AI
 - o Applying AI knowledge, concepts and applications in different scenarios
 - AI course content is over 50%

Evaluate & Create AI

- o Higher-order thinking skills (e.g., evaluate, appraise, predict, design) with AI applications
- AI course content is over 50%

o AI Ethics

- o Human-centered considerations (e.g., fairness, accountability, transparency, ethics, safety)
- o AI course content is over 50%

AI Enabled

- Courses which are not completely AI focused, but rather are enriching AI knowledge and skills through complementary skills and/or knowledge
- o AI course content is 10-49%

The QEP Task Force & The QEP Assessment Subcommittee

A QEP Task Force of diverse individuals across campus was appointed and began to meet in November 2021. The task force was charged by the Director of Institutional Assessment to develop a five-year plan (2024-2029) that would provide all undergraduate students at UF the opportunity to acquire knowledge, skills, and applications in AI. A sub-committee, composed by members of the taskforce, was formed to develop the assessment plan for the QEP. This guide is a component of the QEP Assessment Plan.

Assessment

The assessment of the QEP relies on direct and indirect assessment of the student learning outcomes associated with the QEP/AI courses and assessment of the goals of the program. The subsequent section outlines the direct methods of assessment of the student learning outcomes.

QEP SLOs

The Task Force and the Assessment Subcommittee identified Student Learning Outcomes (SLOs) for the AI literacy topics proposed. The <u>State of Florida Board of Governors</u> (FL BOG) has mandated that all baccalaureate programs in the state public universities develop Academic Learning Compacts (ALCs) for each degree program that include SLOs in three areas: content knowledge, critical thinking, and communication. SLOs were developed to align with the AI Literacies and FL BOG requirements. The SLOs for the four literacies outline what students should know and be able to do by the time they complete a course. The AI SLOs by literacy are listed below:

o Know and Understand AI

- SLO1. Identify, describe, and explain the components, requirements, and/or characteristics of AI. (Content knowledge and communication)
- o SLO2. Recognize, identify, describe, define and/or explain applications of AI in multiple domains. (Critical thinking and communication)

Use and Apply AI

o SLO3. Select and/or utilize AI tools and techniques appropriate to a specific context and application. (Critical thinking and content knowledge)

o AI Ethics

SLO4. Develop, apply, and/or evaluate contextually appropriate ethical frameworks to use across all aspects AI. (Critical thinking and content knowledge)

Evaluate and Create AI

- SLO5. Assess the context-specific value or quality of AI tools and applications. (Critical thinking)
- SLO6. Conceptualize and/or develop tools, hardware, data, and/or algorithms utilized in AI solutions. (Critical thinking)

Rubric Development

Due to the multifaceted nature and variability of AI applications within various disciplines across the university, the assessment sub-committee members agreed to develop a four-scale, holistic rubric for each SLO. In this rubric, each SLO is measured using four broadly described achievement levels. This allows faculty sufficient autonomy in rating, accommodates the variety of applications and discipline-specific skills in UF's over 200 unique programs, and provides actionable data for institutional review and use for improvement.

All AI designated courses must address at least one of the four AI literacies and at least one SLO for that literacy. When faculty submit AI courses for AI designation approval, they are required to identify the literacy(ies) addressed in their course. AI literacies for all courses are reviewed and approved by UF's established undergraduate curriculum approval process, which includes approval by Departments, College Curriculum Committees, AI Curriculum Committee and the University Curriculum Committee. Courses that have at least 50% of the curriculum addressing the one or more QEP SLOs listed and include assessments of those SLOs will be designated as "AI courses". To accommodate courses with 10-49% of the curriculum covering the AI SLOs, we have established a categorical designation of "Enable-AI."

The six rubrics in Table 1 define the performance indicators established for each SLO. Each rubric is based on a four-point scale where three (3) is the Target. A score of four (4) shows performance that exceeds the Target, and scores of two (2) or one (1) are below the Target.

Rubric to assess the SLOs

The Assessment Subcommittee developed rubrics and performance indicators for each SLO. Each rubric is based on a four-point scale where three (3) is the Target. A score of four (4) shows performance that exceeds the Target, and scores of two (2) or one (1) are below the Target (Table 1).

Table 1. AI SLO Rubrics

SLO	4	3 (Target)	2	1
SLO1. Identify, describe, and/or explain the components, requirements, and/or characteristics of AI.	The student identifies, describes and/or explains all of the components, requirements, and/or characteristics of AI.	The student identifies, describes and/or explains most of the components, requirements, and/or characteristics of AI.	The student identifies, describes and/or explains a few of the components, requirements, and/or characteristics of AI but does not identify, describe and/or explain many.	The student does not identify, describe and/or explain any of the components, requirements, and characteristics of AI.
SLO2. Identify, describe, define and/or explain applications of AI in multiple domains.	The student identifies, describes, defines and/or explains all of the applications of AI in multiple domains.	The student identifies, describes, defines and/or explains most of the applications of AI in multiple domains.	The student identifies, describes, defines and/or explains few of the applications of AI in multiple domains but does not identify, describe and/or explain many.	The student does not, identify, describe, define and/or explain any of the applications of AI in multiple domains.
SLO3. Select and/or utilize AI tools and techniques appropriate to a specific context and application.	The student selects and/or utilizes all of the AI tools and techniques appropriate to a specific context and application.	The student selects and/or utilizes most of the AI tools and techniques appropriate to a specific context and application.	The student selects and/or utilizes few of the AI tools and techniques appropriate to a specific context and application but does not select and/or utilize many.	The student does not select and/or utilize any of the AI tools and techniques appropriate to a specific context and application.
SLO4. Develop, apply, and/or	The student develops, applies, and/or evaluates	The student develops, applies, and/or evaluates	The student develops, applies, and/or evaluates a	The student does not develop, apply, and/or

SLO	4	3 (Target)	2	1
evaluate contextually appropriate ethical frameworks to use across all aspects of AI.	all of the contextually appropriate ethical frameworks to use within AI.	most of the contextually appropriate ethical frameworks to use within AI.	few of the contextually appropriate ethical frameworks to use within AI.	evaluate any of the contextually appropriate ethical frameworks to use within AI.
SLO5. Assess the context-specific value or quality of AI tools and applications.	The student assesses all of the context-specific value or quality of AI tools and applications.	The student assesses most of the context-specific value or quality of AI tools and applications.	The student assesses a few of the context-specific value or quality of AI tools and applications.	The student does not assess any of the context-specific value or quality of AI tools and applications.
SLO6. Conceptualize and/or develop tools, hardware, data, and/or algorithms utilized in AI solutions.	The student conceptualizes and/or develops all tools, hardware, data, and/or algorithms utilized in AI solutions.	The student conceptualizes and/or develops most of the tools, hardware, data, and/or algorithms utilized in AI solutions.	The student conceptualizes and/or develops a few of the tools, hardware, data, and/or algorithms utilized in AI solutions.	The student does not conceptualize or develop any of the tools, hardware, data, and/or algorithms utilized in AI solutions.

Procedures for Direct Assessment of SLOs

The QEP assessment procedure is based on faculty scoring selected artifacts using AI SLO rubrics. Instructional designers assist faculty members in associating the AI SLO rubrics with their course "chosen" assignment. Once the AI SLO rubrics are completed by instructors, the SLO assessment data will be stored in a *Learning Management Gradebook* in Canvas. UF IT generates a data report per term that is shared with the QEP/AI² Center administration (QEP Director, AI² Center Project Manager, OIA). Results from this report will be included in the Institutional Effectiveness report submitted to the Office of Institutional Assessment (OIA) annually as part of the internal institutional effectiveness process (First Year report due in Fall 2025). As part of the reporting process the QEP Assessment Administration analyzes and disseminates results among college AI leaderships to determine the impact of the QEP AI across the colleges.

QEP Assessment Administration would be responsible for the following activities each Fall for the QEP:

- Randomly select a sample of 20% of the students in each section of QEP AI designated courses (Note: the 20% sample ensures assessment of the QEP program while not allowing reporting of individual students or faculty, minimizing the stakes for faculty and students. It also minimizes the scoring time for faculty.)
- Train instructional designers for the assessment system and arrange for instructional designers to work with faculty to understand the assessment system and faculty responsibilities.
- Develop Learning Management System (LMS) in Canvas for data collection.
- Data management, analysis, coordination of review retreats, and dissemination of annual impact report among colleges.

Faculty would be responsible for the following:

- Identify course assignment(s) to measure AI SLOs.
- Review the QEP Assessment Guide and rubrics.
- Work with instructional designers to associate AI SLO rubrics with course assignments (CITT and COIP).

- Score the 20% sample selected for the course using the AI SLO rubrics as part of their regular grading in their course.
- Provide feedback on the process so that it can be modified and improved.

Examples of Assignment Types

Faculty members teaching AI courses should identify course assignments to measure AI SLOs. These assignments may vary. Five examples of types of assignments (common in undergraduate education) are listed below:

- *Presentation* a speech or a talk in which a new product, idea, or piece of work is shown and explained to an audience.
- Paper a written work of specified length on a topic, in one of several forms, e.g., research paper, position paper, essay, article, story, poem, script, libretto, etc.
- *Project* a planned undertaking, usually in the form of a response to a task or problem engaged in by students.
- *Performance/ Production* a performance/production is a literary (e.g., story, poem, play, libretto, essay, critique) or artistic work (music, dance, drama, visual art, media), presented or exhibited to the public on stage, screen, or in a physical or digital space.
- Reflection a written statement arising from serious thought or consideration given to the examination and/or exploration of how the writer has changed, developed, or grown from experience or interaction with some subject matter, idea, or purpose.

These assignments produce student work, sometimes referred to as artifacts, that faculty assess for grading purposes. While the faculty establish their own criteria for assignment grading, the UF AI (QEP) SLO assessment rubric presents the criteria established by the QEP Task Force Assessment Subcommittee to assess the AI institutional outcomes.

The Faculty Role in the Assessment of UF AI Across the Curriculum

Faculty play a primary role in the assessment of the success of UF AI Across the Curriculum as an institutional program. This list outlines the faculty role in the assessment process.

- The number of students to be assessed. We will select a random sample of 20% of your students to include in the assessment. You will only need to assess these students. You may, however, include other students if you wish.
- Your existing rubrics remain intact. The UF AI Across the Curriculum assessment does not require you to substitute or replace your existing rubrics. Your rubrics remain exactly as you have developed them. The UF AI SLO Rubric should be applied in addition to your existing rubrics for 20% of your students.
- Assignment selection. You will determine a faculty-selected artifact to use for the pilot assessment. The
 UF AI Across the Curriculum Assessment Subcommittee developed a rubric for various types of
 assignments: papers, presentations, projects, performances/productions, standalone reflections,
 dissertations, thesis, or any other assignment focusing on main knowledge and skills described in the AI
 SLOs.
- *Canvas support*. Once you select your assignment(s), you will be assisted by an Instructional Designer (CITT/COIP) to set up in Canvas the AI SLO rubric that best matches your assignment type.
- The assessment criteria. Each rubric is based on a four-point scale where three (3) is the Target. A score of four (4) shows performance that exceeds the Target, and scores of two (2) or one (1) are below the Target. The criteria will be entered at the bottom of your existing rubric and assessed at the same time that you grade the assignment (in Speed Grader)
- Ratings. You will rate the UF AI SLO rubric criteria at one of four levels of achievement described in

- the rubric. The ratings are not associated with the student's grade.
- Data collection. The levels of achievement you assign will load automatically into a different gradebook than the one that collects your grading information. This is the Learning Management Gradebook, which the instructional designers will set up for you. Once you have completed the assessment, we will go into Canvas and collect the ratings you have assigned.

Contact Information

For questions about the process or to discuss the validity of a specific measure, please contact:

Office of Institutional Assessment Email: assessment@aa.ufl.edu Tigert Hall: Office of the Provost

UF QEP Assessment Glossary

- **AI course categories**. Categories based on the four key areas of AI literacies: 1) Knowing and understanding AI, 2) Using and applying AI, 3) Evaluating and creating AI, and 4) AI ethics. These categories form the basis for the UF model for AI course designation.
- AI² Center. The Artificial Intelligence Academic Initiative Center, known as AI2 (AI squared), is the UF focal
- point for academic initiatives related to AI and data science. The center is also a guiding force in the university's re-accreditation process and its five-year Quality Enhancement Plan as it pertains to AI Across the Curriculum (https://ai.ufl.edu/about/ai2-center/)
- AI enabled. A fifth AI category identified to capture academic courses that support AI through related knowledge and skill development (e.g., programming, statistics) and/or contain a lower total AI content of one of the four Core AI literacy topics.
- AI literacy. First coined as a term in 2015 by Konishi (2015), refers to the knowledge and understanding of AI that is necessary for individuals to participate in the broader discourse around AI and make informed decisions about its use and implications (Laupichler et al., 2022). AI literacy is the ability to understand, use, evaluate, and ethically navigate AI (Long & Megerko, 2020; Laupichler et al., 2022). Audience. A group for whom a work is developed and/or intended and to whom it is delivered.
- **Course AI designation process.** A process in which proposed AI courses are reviewed and approved by an AI Curriculum Committee. All AI designated courses must address at least one competency and at least one SLO for that literacy.
- Direct assessment Direct assessments of student learning are those that provide for direct examination or observation of student knowledge or skills against measurable performance indicators. Examples of direct assessment include but are not limited to quizzes, tests, inventories, team/group projects, standardized tests, licensure exams, internships, service-learning projects, case studies, simulations, and portfolios. (https://assessment.aa.ufl.edu/media/assessmentaaufledu/academic-assessment/Academic-Assessment-Plan-Components.pdf).
- **Effectiveness**. The analysis of multiple data sources to identify strengths, areas for improvement, student success, and outcomes achievement.
- **Faculty-selected artifact.** A sample of student work that the faculty member has chosen as *best evidence* of one or more *AI (QEP) outcomes*.
- **Holistic rubric.** A holistic rubric presents a description of each level of achievement and provides a single score based on an overall impression of a student's performance on a task (Brophy, n.d.).
- **Paper.** A written work of specified length on a topic, in one of several forms, i.e., research paper, essay, article, opinion, etc. (https://assessment.aa.ufl.edu/media/assessmentaaufledu/academic-assessment/uf-quest-assessment/UF-Quest-1-and-2-Assessment-Faculty-Guide-and-Rubrics-fv.pdf)
- **Performance**/ **Production.** A literary (e.g., story, poem, play, libretto, essay, critique) or artistic work (music, dance, drama, visual art, media), presented or exhibited to the public on stage, screen, or virtually in a digital space (e.g., podcast, video).
- **Presentation.** A speech, talk, or digital communication in which a new product, idea, or piece of work is shown and explained to an audience.
 - (https://assessment.aa.ufl.edu/media/assessmentaaufledu/academic-assessment/uf-quest-assessment/UF-Quest-1-and-2-Assessment-Faculty-Guide-and-Rubrics-fv.pdf)
- **Project.** A planned undertaking, usually in the form of a response to a task or problem engaged in by students. (https://assessment.aa.ufl.edu/media/assessmentaaufledu/academic-assessment/uf-quest-assessment/UF-Quest-1-and-2-Assessment-Faculty-Guide-and-Rubrics-fv.pdf)

- **Reflection.** A written statement arising from serious thought or consideration given to the examination and/or exploration of how the writer has changed, developed, or grown from experience or interaction with some subject matter, idea, or purpose.

 (https://assessment.aa.ufl.edu/media/assessmentaaufledu/academic-assessment/uf-quest
 - assessment/UF-Quest-1-and-2-Assessment-Faculty-Guide-and-Rubrics-fv.pdf)
- **Reliability/Precision.** Reliability/precision refers to the general notion of the consistency of the scores across instances of the assessment procedure. (AERA, APA, & NCME, 2014, p. 33).
- **Rigor.** The degree of academic precision and thoroughness required for academic expectations or outcomes to be met successfully. (University of Florida Institutional Assessment, 2019, p. 4).
- **Rubric.** A written guide for assessing student work. At a minimum, it lists the things you are looking for when you assess student work. (Suskie, 2018, p. 190).
- Student Learning Outcomes Expectations for what students should know and be able to do by the time they complete a course. For the AI across the curriculum QEP, these expectations stem from the four AI literacies: 1) Knowing and understanding AI, 2) Using and applying AI, 3) Evaluating and creating AI, and 4) AI ethics.
- Validity. Validity refers to the degree to which evidence and theory support the interpretations of assessment results for the proposed uses of the assessments. Validity has to do with the inferences we make based on the results of an assessment and is determined by the evidence we have that can substantiate the claims we make about what our assessment results tell us. (AERA, APA, & NCME, 2014, p. 11)

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The UF AI Across the Curriculum Quality Enhancement Plan Assessment Subcommittee

Subcommittee				
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Timothy Brophy	Former Director of Institutional Assessment			
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Aaron Thomas	UFIT			

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