

AI Integration Framework for the Tagliatela College of Engineering¹

University of New Haven

1. Executive Summary

The TCoE AI Integration Framework provides a measurable and phased approach for integrating Artificial Intelligence (AI) literacy, faculty capability development, and responsible AI practices across all undergraduate and graduate programs.

Guiding Principles

1. AI augments engineering and applied science practice.
2. Human judgment remains central to professional responsibility.
3. Responsible AI use is a professional and ethical obligation.

2. Vision

By 2028, TCoE will demonstrate integrated AI literacy across all programs, supported by documented faculty engagement and measurable student competency outcomes.

3. Operational Definition of AI Literacy

AI Literacy is defined as the ability to evaluate AI capabilities and limitations; apply AI tools appropriately to engineering and applied science tasks; verify AI-generated outputs; disclose AI use transparently; and assess ethical and professional implications of AI deployment.

4. Framework Components

4.1 AI Literacy Across Programs

Each program will integrate foundational AI modules and identify at least one required course in which applied AI competency is assessed using rubric-based evaluation.

4.1.1 Key Initiatives

- **Universal AI Foundation Modules:** Develop three standardized e-learning modules covering effective and responsible AI use, academic integrity, citing AI-generated content, and ethical considerations.² Integrate these modules into first- and second-year undergraduate courses and in first-year graduate courses.
- **AI-Enhanced Problem Solving:** Integrate AI tools into existing coursework, teaching students when and how to leverage AI for engineering and applied science tasks while understanding limitations.

¹ Adopted by all TCoE programs in February 2026.

² Funding to develop these modules was provided by the Davis Educational Foundation through the PITCH 2.0 grant.

- **Ethics Updates to Include AI:** Revise ethics content across programs to address AI-specific considerations, building on traditional engineering and applied science ethics topics.

4.1.2 Success Metrics

- 100% of incoming TCoE students complete AI foundations modules by the second year of undergraduate programs and the first year of graduate programs.
- AI literacy learning outcomes embedded in all program curricula by Spring 2027.
- Student competency assessments demonstrate practical AI application skills.

4.2 Faculty Development and Support

Structured professional development opportunities will support faculty exploration and integration of AI tools.

4.2.1 Professional Development Programs

- **AI Workshop Series:** Offer hands-on workshops covering AI tool proficiency, pedagogical strategies, assessment design, and academic integrity considerations.
- **Faculty Learning Communities:** Establish interdisciplinary groups exploring AI integration in specific contexts (design courses, laboratories, capstone projects) with regular meetings and shared resources.
- **Course Redesign Institutes:** Conduct intensive summer programs supporting faculty in reimagining courses with appropriate AI integration.

4.2.2 Support Infrastructure

- Appoint AI integration coordinator to support faculty implementation.
- Establish repository of AI-enhanced assignment templates, rubrics, and best practices.
- Recommend clear guidelines on AI use policies for syllabi and course materials.
- Provide technical support for AI tool deployment in courses.

4.2.3 Success Metrics

- 80% of TCoE faculty complete foundational AI modules in 2026.
- Interdisciplinary faculty learning communities around AI established.
- Library of 25+ AI-enhanced course materials developed and shared.

4.3 Responsible AI and Ethics Integration

Integrate responsible AI principles across curricula, aligned with professional codes and academic integrity standards with the following elements:

- Completion of AI ethics module by students
- Integration of case studies addressing AI risks and failures.
- Assessment of AI ethics in designated courses.

5. Phased Implementation Timeline

Phase I (2025-2026)	Launch AI foundation modules; initiate faculty workshops.
Phase II (2026–2027)	Embed AI learning outcomes; pilot assessments.
Phase III (2027–2028)	Full program-level integration; annual review cycle.
Ongoing	Resource refinement; documentation; sharing practices.

6. Clarifications

This framework does not:

- Replace disciplinary standards.
- Mandate specific commercial AI platforms.
- Override academic freedom in course design.

This framework is designed to complement and potentially accelerate university-wide AI initiatives.

7. Governance Structure

- **AI Integration Coordinator:** Works with the Dean to oversee implementation and support faculty.
- **Program AI Champions:** Faculty members chosen by each undergraduate and standalone graduate program to promote AI integration efforts within programs.
- **AI Implementation Committee:** Consists of AI Integration Coordinator, Program AI Champions, and Dean. Reviews progress and shares best practices.

8. Conclusion

Successful implementation will depend on faculty expertise, thoughtful experimentation, and shared learning. This framework provides structure; its strength will come from our collective engagement.

Appendix: Sample AI Policy Language for Course Syllabi

AI use disclosure requirements:

- Disclose AI assistance in submissions.
- Cite AI-generated content appropriately.
- Verify accuracy of AI-generated information.
- Demonstrate independent understanding.

Example Disclosure Statement: “Portions of this assignment were developed with the assistance of [Tool Name, Version, Date Accessed]. All outputs were reviewed and verified by the author.”