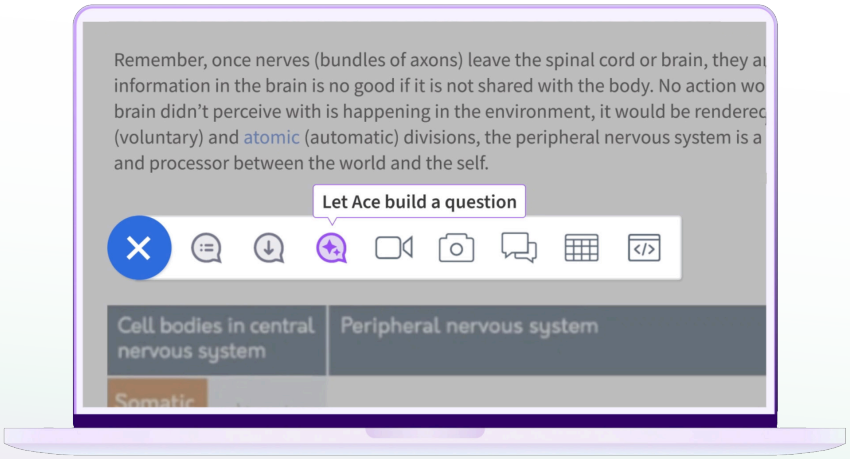
Teaching Tomorrow:

Exploring AI in the Higher Ed Classroom

TOP HAT

Introduction

Setting the Stage for *Artificial Intelligence*



The arrival of artificial intelligence has been met with a mix of excitement and anxiety. While AI offers new opportunities for teaching and learning, it has also raised concerns around academic integrity and ethical usage. One thing is clear, navigating AI can feel pretty overwhelming.

This guide is meant to provide an introduction for those interested in exploring the use of AI in their teaching. To get you started, we've rounded up advice from leading educational practitioners like Jesse Stommel, José Antonio Bowen, and Derek Bruff, as well as a number of faculty who are experimenting with AI in their classrooms. We offer thoughts and resources for creating an AI policy, and assignment ideas that cover a range of disciplines. While ChatGPT has received a lot of attention, we also provide an overview of other AI tools we think you might find helpful, including Ace, Top Hat's AI-powered teaching and learning assistant.

Things are moving quickly and we don't pretend to have all the answers. But we hope this introduction will give you some of the tools and perhaps a little inspiration as you weigh putting AI to work for you and your students.

Let's begin.

Contents

Chapter 1 3
A Desire to Experiment, Iterate and Repeat

Chapter 2 4
Creating an AI Policy

Examples of AI policies for your syllabus 5

Get the job done in Top Hat 7

Chapter 3 8
How To Embrace AI in Any Discipline

Faculty spotlight: Increasing final grades with an AI chatbot 9

Faculty spotlight: AI-powered assignments and activities 10

Chapter 4 11
Incorporate AI Tools Into Your Teaching Toolkit

Chapter 5 12
Human-Centered Learning Enhanced By AI

Faculty spotlight: Using Ace to prepare students for Anatomy & Physiology exams 13

References 14

Chapter 1

A Desire to *Experiment, Iterate and Repeat*

When ChatGPT burst onto the scene, some early adopters couldn't wait to kick the tires. Most faculty, however, were more comfortable with a 'wait and see' approach. With time, the picture is changing.

Data from Tyton Partners' annual report[1] illuminates a growing willingness to experiment with AI in their courses. Across the board, students, administrators at their institutions and faculty have begun to see value in using AI to deepen engagement and reduce manual tasks.

76% of students have either tried or are regular users of GenAI (Spring 2024)

75% of institutional administrators have either tried or are regular users of GenAI (Spring 2024)

65% of instructors have either tried or are regular users of GenAI (Spring 2024)

Whether creating content and assessments, generating ideas for class activities or reducing administrative tasks, AI is slowly but surely gaining traction in higher education.

If you're still testing the waters, approaching AI from a place of curiosity is a great place to start. Dr. Derek Bruff, author of *Intentional Tech* and former Director at the Center for Teaching at Vanderbilt University, echoes this sentiment: "These large language models have been trained on amazingly large sets of data. If we think of these as more creative or perhaps playful tools, it can help us get a better sense of what they're good at, what they're not good at and find a way to integrate them into our teaching and learning practices."[2]

Using AI doesn't mean giving up all control over your course. Like Bruff, Ethan Mollick, Associate Professor at the University of Pennsylvania's Wharton School, challenges us to view AI as a "co-pilot" to help us navigate and improve our instructional practice. "AI's ability to quickly ask questions and adapt to a given circumstance can make it a partner in a co-creation process. Its capacity to interact and suggest solutions or paths forward can challenge students to both articulate their ideas clearly and consider alternatives," he says.[3]

> "AI's ability to quickly ask questions and adapt to a given circumstance can make it a partner in a co-creation process."
>
> **Ethan Mollick** | Associate Professor
> The Wharton School,
> University of Pennsylvania

Chapter 2

Creating an *AI Policy*

Your syllabus is one of the first points of interaction in your course. Set students up for success by providing clarity on your policy for AI usage. Doing so will ensure they understand what it means to use these tools in responsible and ethical ways. Remember, you don't need to take an "all or nothing" approach. Stanford University's Teaching Commons department suggests asking yourself the following questions in determining when AI can—or cannot—be used.[4]

1

What is the policy and what tools does it apply to specifically?

2

When does it apply? What conditions or contexts allow or preclude the use of AI?

3

What processes and consequences result from non-compliance?

4

What rationale and reasoning guide this policy?

5

How do you provide support to students in relation to this policy?

6

How does the policy show support for student well-being?

At a recent webinar titled *How to Improve Teaching and Learning with Generative AI*—in partnership with Dr. Derek Bruff—we polled more than 400 faculty on their current AI policy. Here's what we found.

Dr. Derek Bruff
Educator and Author of *Intentional Teaching*

Green light

26% of faculty are excited to see what AI can do in their course.

Yellow light

35% are open to permitting AI use with limitations.

Flashing light

29% are still unsure about their AI policy.

Red light

10% completely prohibit the use of AI in class.

Along these lines, José Antonio Bowen, celebrated co-author of *Teaching with AI: A Practical Guide to a New Era of Human Learning*, offers some helpful tips to craft your policy. Bowen recommends incorporating the following sections into your own statement.

1. Discuss the circumstances in which AI use is permitted or forbidden
2. Outline how students should cite or credit AI in their work
3. Offer a disclaimer about the limits of AI when it comes to reliable data
4. State ways in which students can ethically and responsibly use AI
5. Discuss the importance of using AI to learn rather than generate homework answers or content for assignments

There's often a time and a place for AI. That's one of the reasons Bowen advocates for ensuring students first master fundamental concepts—whether critically constructing an argument or evaluating evidence—before experimenting with AI.

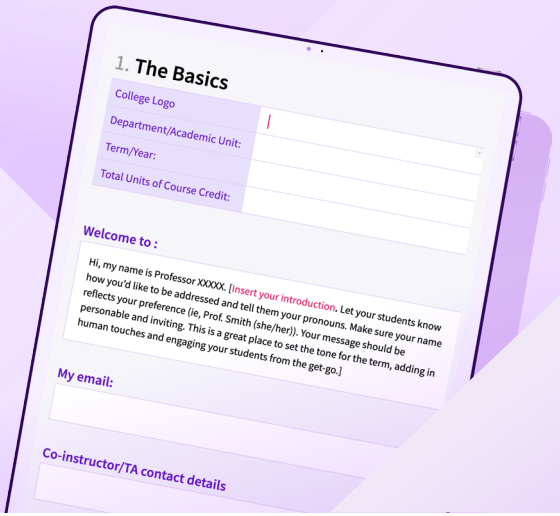
Examples of AI policies for your syllabus

Educators continue to weigh the opportunities that come with using AI in higher ed. We've rounded up sample blurbs to use in your own syllabus, as provided by The University of Toronto's Office of the Vice-Provost, Innovations in Undergraduate Education department.

Get a sample AI policy in our editable syllabus template

Download Top Hat's free and fully customizable syllabus template, with several AI policy statements that you may edit to fit your course needs.

Download



I want to…	Faculty sentiment	Sample syllabus blurb
Prohibit the use of AI	"It's exceedingly difficult to think of ways to incorporate AI in productive ways that don't pave the way for integrity problems when students hand in assignments." **Graham Murphy** English and Liberal Studies Seneca Polytechnic	"This course policy is designed to promote your learning and intellectual development and to help you reach course learning outcomes. The use of generative artificial intelligence tools or apps for assignments in this course, including tools like ChatGPT and other AI writing or coding assistants, is prohibited."
Explore the use of AI with limitations	"I feel like it's like the calculator—sooner or later we will all have them in our pockets, so I need to adjust what I'm teaching to reflect higher order thinking as opposed to the computations. It also means upshifting my evaluations." **Rosana Fialho** Human Resources Sheridan College	"Students may not use artificial intelligence tools for taking tests, writing research papers, creating computer code, or completing major course assignments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding."
Proceed with using AI to engage students	"Maybe students use ChatGPT to get a draft copy then they submit both their draft as well as what they changed from the draft with their rationale, references, and analysis." **Kerri Shields** Business and Management Studies Centennial College	"Students must submit, as an appendix with their assignments, any content produced by an artificial intelligence tool, and the prompt used to generate the content. Any content produced by an artificial intelligence tool must be cited appropriately."

Get the job done in Top Hat

Top Hat's suite of engagement features also allow instructors to improve teaching in the moment. Here's three features we suggest using as you begin the term.

1

Collect anonymous feedback

Invite students to share how they use AI in their education through anonymous polls.

2

Act upon real-time data

Receive in-the-moment feedback about perceptions towards AI that can inform a broader discussion about permissible AI use in class.

3

Design your own syllabus

Use Top Hat Pages, our content personalization tool, to design a fully interactive syllabus complete with your own AI policy statement.

Chapter 3

How To *Embrace AI* in Any Discipline

AI has prompted educators across the globe to recalibrate their pedagogical practices. Instructors have met the challenge by experimenting with AI in higher ed and injecting exciting new ideas into their assessments, assignments and discussions. During our webinar with Dr. Derek Bruff, we polled instructors on ideas for using AI to reduce the manual labor that can come with course prep and grading. Here's what they shared.

How have you used AI to improve teaching efficiency and quality of instruction?

"I use it to summarize common themes students write on mid-semester or end of the semester feedback. Also use it to read student discussion posts for themes, or picking good posts."

Emanuele Rizzi
Psychology
Florida International University

"I've used AI to assist with rubric development."

Jamie Thompson
Chemical Dependency Counseling
Texas State Technical College

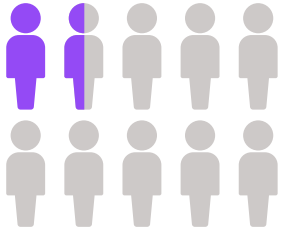
"I use ChatGPT to enhance my assignment instructions or to add creative elements to an assignment that I feel is boring or not engaging."

Scott Morgan
English
Southeastern University

Faculty spotlight: Increasing final grades with an AI chatbot

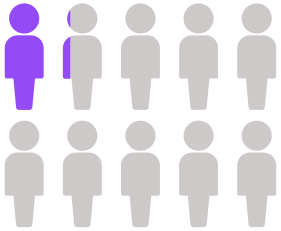
Does using AI in the classroom really lead to better grades? Michael Evans, Senior Lecturer in Political Science at Georgia State University and Lindsay Page, Associate Professor of Education Policy at Brown University, led a study to determine the impact of GSU's AI-enhanced text messaging tool in a 500-person Political Science course in 2021. Evans and Page analyzed how the tool's ability to send reminder text messages about class assignments, academic supports, and course content increased student outcomes. Here's what the study revealed.[5]

16%



Students who received personal support messages via the chatbot earned grades of B or higher at a rate **16 percent** higher than those in the control group

11%



First-generation students who received personal support messages via the chatbot earned final grades that were **11 percent** higher than those in the control group

"Students who are low income, the first in their families to go to college or from underrepresented minorities often lack a support system at home or familiarity with how to get help in college. They are the ones to benefit the most by having this tool in their hand 24/7."

Timothy Renick

Founding Executive Director of the National Institute for Student Success
Georgia State University

Faculty spotlight: AI-powered assignments and activities

We polled faculty on how they're using AI in their courses. Here's a roundup of what they shared.

STEM: Help students persist in gateway courses with opportunities to visualize learning

"To show an example of a bad personal statement for a medical school application."

David Cassiday
Academic and Pre-Health Advisor
The Pennsylvania State University

"I had students ask Top Hat Ace to explain Elasticity of Demand to a second grader."

Donna Smith
Mathematics
Sierra College

"I have had students use ChatGPT to compose interview questions for a patient with a specific condition and then the students ask these questions on a telehealth assignment."

Connie Rose
Nursing
Cincinnati State Technical and Community College

"Evaluations of the output. Testing in programming if a python program does what it should do and if they can fix it or make it better AND using RStudio to create models and then evaluate."

Scott Flemming
Industrial Engineering
Dalhousie University

Social Science: Add some levity to case studies

"I have students use AI to create client contracts for a small business of their choice."

Mike Koval
Accounting and Legal Studies
Salisbury University

"I have asked students, in groups, to input a fictitious legal case and ask ChatGPT to come up with a response. The generated responses are then presented and discussed in class."

Ngo Chun Luk
Law
University of Aruba

"To create presentations using Gamma or Beautiful AI as a framework to get started and look at accuracy of information."

Theresa Anzovino
Sociology
Author of Top Hat's *Walk a Mile* custom eText
Niagara College

"I create analyses of readings and ask students to evaluate the AI response. This works especially well if they've had a discussion of the reading first and then compare the AI response."

Mark Verbitsky
Political Science
University of California, Davis

Humanities: Build soft skills to serve students far beyond your course

"I had students use Gen AI to compose a DEI policy and then critique it (it's a library management class)."

Melissa Mallon
Library System
Vanderbilt University

"Generating summaries of philosophical pieces and then having students critique them based on their understanding of the philosophical theories."

Ruth Poproski
Center for Teaching and Learning
University of Georgia

"Doing an environmental (breadth and depth) scan of what the field of research has identified on a topic."

Andrea Rorrer
Educational Leadership and Policy
University of Utah

"Have students use ChatGPT to write thesis statements."

Elizabeth Grundhoffer
English
New Mexico State University

Chapter 4

Incorporate AI Tools Into Your Teaching Toolkit

The technology landscape continues to evolve rapidly. While ChatGPT, DALL-E and Google Gemini have received a lot of attention, there are many other tools that offer purpose-built solutions for educators. Here are some of our favorite faculty recommendations.

Brisk Teaching

Generate lesson plans, quizzes and targeted feedback in response to student assignments.

DeepMind

Generate computer code that students may adapt or critique for their own assignments.

Nabla

Generate instant clinical notes after a patient visit—perfect for medical students.

NotebookLM

Generate study guides and outlines after uploading a set of documents.

SCISPACE

Upload a research article and receive a detailed summary and reflection questions.

SlidesGPT

Input your sample topic or learning unit and generate a free slideshow.

While ChatGPT might be synonymous with 'AI,' faculty have begun to veer towards platforms that play to the strengths of their discipline. Here's how the following AI tools can reduce manual course prep and, just as important, support job-ready skills among students.

Gamma

A medium that builds presentations, documents and websites

Lisa Blue, Instructional Specialist at Eastern Kentucky University, says faculty at her institution are encouraged to use Gamma to develop presentations and lesson plans.[6]

Shiny

A tool to build interactive web apps from code

Richard Ross, Assistant Professor of Statistics at the University of Virginia, asks students to design a basic web application in his Data Visualization course. Students manually create an app and then determine how to prompt R Shiny to replicate their logic.[7]

stability.ai

A deep learning, text-to-image model

Hod Lipson, Professor of Innovation at Columbia University, invites students to use StableDiffusion to illustrate their own robots in class. He goes one step further by asking students to document the prompts they input and the results the AI tool provided.[8]

Chapter 5

Human-Centered Learning Enhanced By AI

Top Hat Ace, our AI-powered teaching and learning assistant, is the latest milestone in our mission to make education more effective, inclusive and accessible. Designed to create more impactful teaching and learning experiences, Ace offers AI-powered study support and course prep.

Teaching challenge

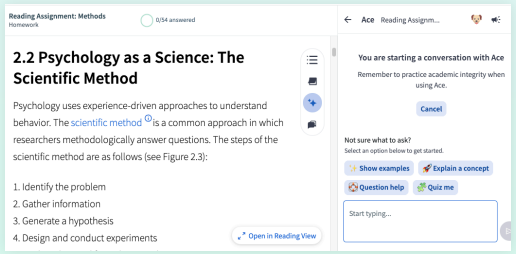
Providing One-to-One Student Support

Research suggests that students who receive one-on-one tutorial instruction with periodic formative tests and feedback tend to perform better on average than students who receive conventional classroom instruction. The challenge is one-to-one tutoring isn't feasible to implement at scale.

How Top Hat Ace helps

Ace for Students: Instant and Course-Specific Study Support

Students can use Ace to clarify challenging concepts, elaborate through discussions, quiz themselves to get feedback, and receive step-by-step guidance to solve problems—all based on the context of your course materials.



Teaching challenge

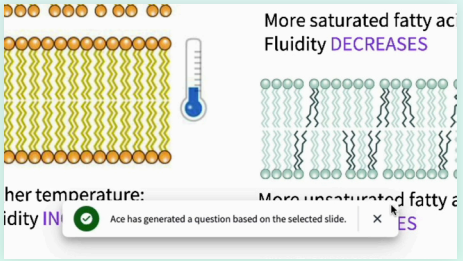
Supporting Evidence-Based Teaching at Scale

Evidence-based teaching methods, including active learning through low-stakes formative assessments, have been shown time and again to improve student success, and to reduce or eliminate achievement gaps for historically underrepresented populations.[9] How do you bring evidence-based teaching to life in a large course?

How Top Hat Ace helps

Ace for Educators: Make Every Lesson Active

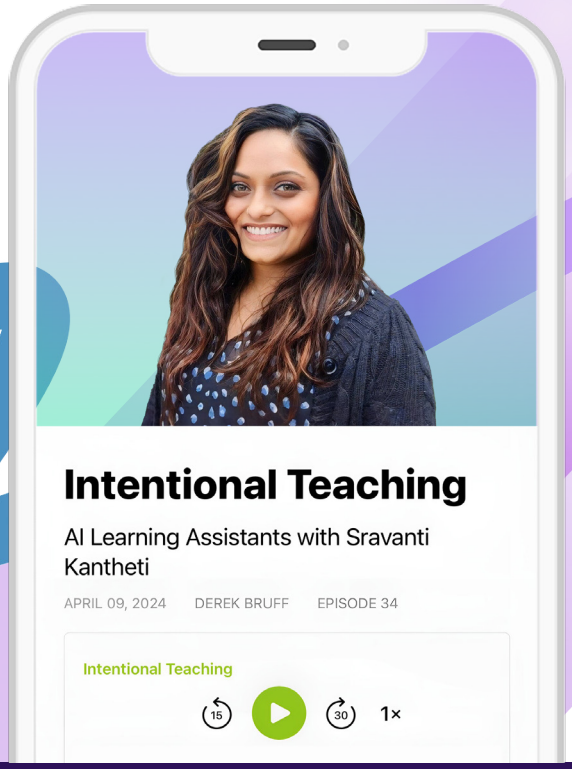
As an instructor, you can use Ace to engage students with comprehension checks, critical thinking questions, and peer discussions—all based on your course materials—that are seamlessly integrated into your lecture slides and textbook readings.



Faculty spotlight: Using Ace to prepare students for Anatomy & Physiology exams

Dr. Sravanti Kantheti, Program Director for Anatomy and Physiology at Lanier Technical College, has been using Ace to reduce the work of integrating frequent assessments into her lectures and readings. In a recent interview on the *Intentional Teaching podcast*, she also shares how students are using Ace to simplify challenging concepts to create their own study guides. As Dr. Kantheti remarked, “I feel more confident in allowing them to utilize [Ace] as a tool because I know it’s accurate and I know it’s the information I want them to know and the rigor I want them to have when studying.”

Listen to the Podcast



Meet Top Hat Ace

See how our AI-powered assistant takes a humanizing and evidence-based route to teaching and learning.

Request a Walkthrough Today

TOP HAT

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