

Getting Started with Flipped Classroom

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Overview

Depending on your content and the learning outcomes for your course, lectures may be an important part of your teaching strategies. However, it is important to reflect on whether providing all lectures **during** class is the best use of your time with students. Using class time primarily for lectures may encourage **passive learning behavior** in students. Current research suggests that [active learning](#) can lead to an improvement in student outcomes and facilitates higher levels of learning. However, intentional planning, reflection, execution and evaluation as the instructor is key.

So, how can we provide important lecture content to students while dedicating more class time to active learning activities? One strategy is through the flipped classroom model. In this strategy, foundational level knowledge and skills are developed independently, **outside** of class time. This foundational work sets students up for more challenging, [active learning](#) activities facilitated by faculty during class.

One need not flip an entire semester's curriculum to implement this model. Remember, it is best to **start small** when implementing a new teaching strategy. Try it for one or two classes to see what does and doesn't work in your particular course with your particular students. Test, evaluate, and try again. Completely overhauling an entire semester's curriculum may set you up for failure and may not be the best approach for achieving your overall course goals. If your course already includes student presentations, you might find our [Flipped Student Presentations Guide](#) helpful. Using this approach can give you a sense of what to expect when flipping other components of your course.

Faculty Examples:

- Allen Mincer requires [pre-class microlearning videos with knowledge checks](#) to prepare students for in-class learning.
- Duncan Smith, Esteban Mazzoni and Barbara Akum provide [chunked pre-class lecture videos](#).

- Marc Lieberman [flipped the recitation sections for both of his large lecture courses](#), Introduction to Microeconomics and Intro to Macroeconomics, eliminating the need for students to purchase textbooks and platform licenses.

Before You Begin: Student Buy-In

In a flipped-classroom, faculty provide students with pre-class lecture videos, course materials and assessments that enable students to prepare for in-class activities. We must be explicit with our students about our expectations and the *why* behind our expectations. If some students struggle to know what to do with your lectures during class time, they will likely struggle with it when watching it on their own.

To address this, an important first step to implement a flipped classroom model is to **discuss the model with your students**. [Research has shown that students don't necessarily feel like they learn more when participating in an active learning model](#). We must be aware of this student misconception and **address it directly**. This is key to the flipped classroom and this is the case you must make to your students for this model to work.

At the start of any course, or at the beginning of a new portion of content, it is helpful to have a conversation with your students about **what you are about to embark on and why**. Beyond listing your expectations in a syllabus or other course document, prompting students to **reflect with you** about your goals as the instructor and their goals as the students can support greater engagement, especially when using a teaching strategy that may be completely new to them. Most students have experienced a lecture. The flipped classroom will likely be new. [This first day of class icebreaker](#) is an example of how you can shape student expectations from the start of the semester by introducing the idea of learning as a process and helping students prepare to engage productively in that process.

For such conversations consider discussing some of the following:

- What is the purpose of the flipped classroom? Why do you prefer sharing your lecture material outside of class?
- What should students *do* with the material they must learn before coming to class?
- How can students know they are ready for the in-class sessions?
- What benefits will they gain individually and as a class by participating fully in this way of learning?

Faculty Example Course Structure

All flipped classroom approaches involve a combination of pre-class learning activities that provide students with the foundational content knowledge and skills they need to engage in more in-depth and/or collaborative in-class activities. The structure and combination of these types of activities are dependent on course content and their accompanying learning outcomes.

As an example, see [Allen Mincer's flipped classroom in action](#). Prof. Mincer organizes the learning materials and course structure within the Brightspace course. Pre-class learning materials include [microlearning videos](#) with [Annotate](#) enabled for comments, questions, and notes. The [in-class instructions and assignments](#) are available in Brightspace for each unit.

Sample Week: Flipped Physics Course

1hr 15min classes on Tues/Thurs

1hr 40min lab on Mon

Week 3	Pre-Class	In-Class
Monday		Lab Activity (1 hr 40 min - based on previous week's content)
Tuesday		
Topics: <ul style="list-style-type: none"> 5.1: Aristotle and Galileo 5.2: Kinematics 5.3: X and Y motion; Multidimensional motion 	Due before Tuesday class: <ul style="list-style-type: none"> 5.1 Video Lectures (3 min x 2) + Knowledge Checks 5.2 Video Lecture (5 min x 4) + Learning Checks 5.3 Video Lecture (3 min x 2) + Learning Checks 	Tuesday In-Class Activities: <ul style="list-style-type: none"> Discussion on lecture material (10 min) Aristotle - Galileo debate (20 min) Kinematics small group activity (45 min)
Thursday		
Topics: <ul style="list-style-type: none"> 6.1: Newton's 1st law 6.2: Newton's 2nd law 6.3: Newton's 3rd law 	Due before Thursday class: <ul style="list-style-type: none"> 6.1 Video Lectures (3 min x 2) + Learning Checks 6.2 Video Lecture (4 min x 2) + Learning Checks 	Thursday In-Class Activities: <ul style="list-style-type: none"> Discussion on lecture material (10 min) Conceptual problems on Newton's laws small group activity

	<ul style="list-style-type: none"> 6.3 Video Lecture (7 min) + Learning Check 	<ul style="list-style-type: none"> (45 min) Create original questions (20 min)
Weekly HW Assignment	Problem Set Due Monday	

Pre-Class Learning Materials

When designing your pre-class activities, you can build your student learning expectations into the materials themselves. Rather than posting a 90 minute lecture, use educational tools to provide **shorter chunks** of foundational knowledge paired with **low-stakes assessments** or other engaged learning activities.

For instance, when providing a recorded lecture to students in Brightspace, students can annotate, discuss, and ask questions during the video via tools like [Annoto](#) or [Perusall](#). Students can take a quiz or submit their notes as an outline or summary to demonstrate their understanding before coming to class. Such assignments will prompt students to move beyond passive listening and into active learning throughout the lecture.

When designing these pre-class learning exercises, you do not necessarily need to create content that requires you to grade student work. Exercises in Perusall or knowledge checks/quizzes can be set up to generate auto-grades, which will provide feedback to students about their learning and generate more low-stakes grades that can mitigate the stress or anxiety students may otherwise feel about achieving a particular grade in your course.

As the instructor, you can review these materials to identify common misconceptions and questions that require further discussion in class. Many of the aforementioned tools provide learning analytics which you can use to inform your planning to track areas of interest or confusion. Learn more about [Perusal Learning Analytics](#), [Annoto Learning Analytics](#), and [tracking student progress in Brightspace](#).

By providing your lectures with the flipped classroom model, you free your in-class time for more interactive learning facilitation. You can use any of the [active learning](#) strategies that fit your discipline, including discussions, debates, collaborative problem-solving and student presentations.

Potential Tools and Guides to Create Pre-Class Learning Materials

➤ [Creating Lecture Videos with NYU Stream](#)

- [Getting Started with DIY Educational Videos](#) - be sure to check out the sections on [Cognitive Load Theory](#), [UDL](#) and [Chunking](#)
- [Create Multiple Annotate Discussion Groups](#)
- [Getting Started with VoiceThread](#)
- [Using Perusall in Brightspace](#)
- [Getting Started with Knowledge Checks](#)
- [Writing Better Questions for Online Assessment](#)

In-Class Sessions

After spending the time and effort to prepare students to engage in this model and develop all pre-class learning materials, in-class sessions are just as important in the flipped classroom model.

Redundancy will kill student motivation. If you cover foundational material in the pre-class lectures and learning activities, don't re-teach it in the exact same way during your in-class sessions. Rather, use student assessments to identify pinch points or misconceptions in their content knowledge that require additional instruction during in-class sessions.

Demonstrate to students the value of their hard work before in-person classes by utilizing in-class time for **more interactive learning facilitation**. You can use any of the [active learning](#) strategies that fit your discipline, such as discussions, debates, collaborative problem-solving or student presentations.

Feedback is another important component of the flipped classroom model so students have ample opportunity to identify weak points in their understanding of the content. You can provide effective feedback through assessments and individual/collaborative learning activities that prompt students to evaluate and improve their learning process, which will positively impact student outcomes.

Flipped Classroom Structures

- **Capsule design**
 - In a capsule design flipped classroom, the course content is divided into small, manageable “capsules” or units. Each capsule typically includes a pre-recorded lecture or other multimedia resource that students review before class. This allows class time to be used for active learning activities, such as discussions, problem-solving sessions, or hands-on projects. The capsule design provides flexibility and allows students to learn at their own pace.
 - Imagine the semester in 2-3 week units that culminate with a comprehensive summative assessment, exam, or project.



- Flexibility: you can switch out content and students who are absent or go remote can catch up on an assignment sequence.
- Semester-long assignments can be broken down into a set of milestone deliverables.
- **Scaffolded Assignments**
 - A scaffolded design flipped classroom involves providing students with temporary support or structures to assist in their learning. In the context of a flipped classroom, this could involve guided notes or questions to accompany pre-class multimedia resources, structured in-class activities that build on the pre-class learning, and gradual release of responsibility as students become more comfortable with the material. The goal of scaffolding is to gradually develop students' skills and independence.
 - Scaffold your assessments with knowledge checks, discussion forums, and group problem solving activities that have low-stakes grades and complete cumulative steps toward the end-of-unit assessment.
 - [Allen Mincer's flipped classroom](#) follows this format.

Further Reading:

- [Student Preclass Preparation by Both Reading the Textbook and Watching Videos Online Improves Exam Performance in a Partially Flipped Course](#)

Considerations

Media

- Accessibility is an essential component of course design. When selecting or creating learning materials for your students, be sure that all content is accessible. You can learn more, in addition to how-to guides and accessibility checklists, on the [Digital Accessibility Site](#).
- [Our Getting Started with DIY Educational Videos Guide](#) is an excellent starting point if you would like to create your own videos, presentations, or podcasts to serve as the pre-class learning materials.
- Be attentive to the length of each video or podcast you expect students to consume, covered in [Myth 3 of our Ed Videos Guide](#). Short videos, podcasts, or other media, paired with regular knowledge checks or other assessments is more effective than a 90 minute lecture. Research shows that students' attention spans will start to drift for individual pieces of content longer than ~7 minutes.
- The videos, podcasts, or other media you need to cover foundational content may already exist. Make sure you are not reinventing the wheel. Utilize open-source materials, the NYU library, youtube, or trusted publications from your field.
- You can create interactive videos using various tools.
 - [Create Multiple Annotate Discussion Groups](#)



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Last Updated: 5/16/25

- [Getting Started with VoiceThread](#)
- [Using Perusall in Brightspace](#)
- [Powtoon](#)

Assessment

- Continuous feedback to students about their proficiency is key. You can build in knowledge checks for both the pre-class and in-class learning activities in your Brightspace Course. Resources and potential Tools:
 - [Getting Started with Knowledge Checks](#)
 - [Writing Better Questions for Online Assessment](#)