

A row of five Ultimaker 2 3D printers is shown in a laboratory or workshop. The printers are white with black frames and are arranged in a line. The background shows a wooden wall and a metal frame. The text "Ultimaker 2" is visible on the top of each printer's frame. The scene is lit with warm, indoor lighting.

3D Printing

From F2F to Duke Extend

The challenge

- Chip Bobbert has over 50 3D printers for people to use
- Using 3D printers requires training
- Chip has given the same training demonstration hundreds of times



So, let's automate it

- Videos in learning management systems (LMSs) never get tired of explaining the same thing over and over
- Filming Chip's instruction for an eLearning program seemed logical

Some considerations

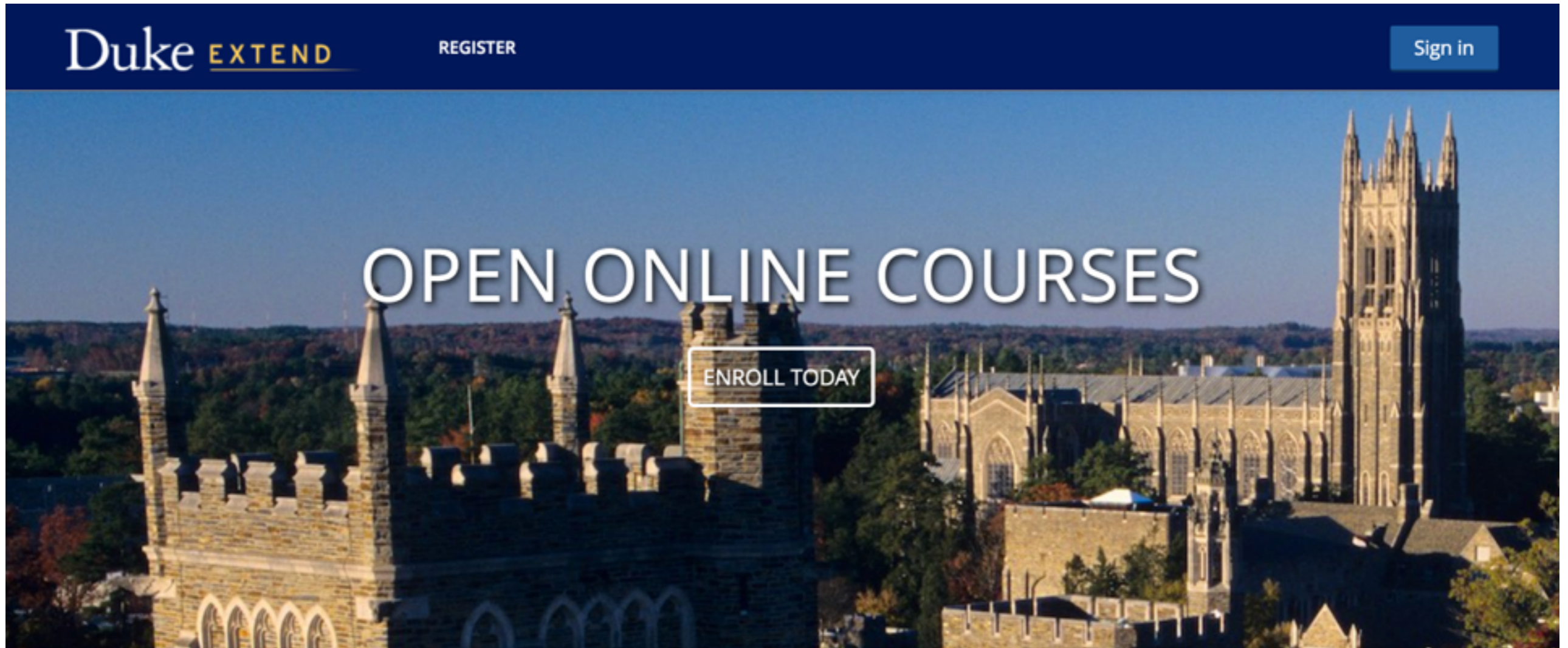
- Chip's sessions need to be very video-centric
- Chip's "how-to" sessions ≠ the usual Sakai course structure
- A lot of what Sakai offers would be overkill
- This course would be open to everyone at Duke: a MOOC that could be accessed by thousands

Meanwhile

While Chip was looking for a technological solution to his lecture burden, CIT was looking for a way to pilot a new LMS—edX.

- EdX is an open source LMS developed by MIT and Harvard
- It's very modular and customizable

Duke Extend



<https://extend.duke.edu/>

3D printing course

View this course as:

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Welcome to DukeExtend's 3DP101!

3D Printing at Duke

Course Updates and News

 May 18, 2016

[Hide](#)

WELCOME TO 3D PRINTING AT DUKE!

This course is for Duke students, instructors, and staff. At the end of this course you should be able to print your designs using Duke's 3D printers. To start the course, click on the "Course" link to the right of "Home" at the top of the page.

[Home](#) [Course](#) [Discussion](#) [Progress](#) [Contact Information](#)

Welcome to DukeExtend's 3DP101!

3D Printing at Duke

Course Handouts

None.

Course content

The screenshot shows the DukeExtend course interface. At the top, the DukeExtend logo is on the left, and the course title 'DukeExtend: 3DP101 3D Printing at Duke' is in the center. On the right, there is a user profile icon with the name 'hrv'. Below the header, a dropdown menu shows 'View this course as: Staff'. A navigation bar contains links for Home, Course (which is highlighted), Discussion, Progress, Contact Information, FAQ, Useful Links & Downloads, Instructor Bio, and Instructor. On the left side, there is a 'Bookmarks' section with a list of course units: 'Overview and Printing Technology Information' (expanded), 'Introduction to 3D Printing' (selected), 'Types of 3D Printing Technologies', 'Simple FDM 3D Printing at Duke', 'Troubleshooting and User Maintenance', and 'Knowledge check'. The main content area shows the breadcrumb 'Overview and Printing Technology Information > Introduction to 3D Printing > About This Course'. Below this is a navigation bar with a back arrow, three document icons, a hamburger menu, and a forward arrow. To the right of this bar are buttons for 'VIEW UNIT IN STUDIO' and 'Bookmark'. The main text describes the course as an introduction to Duke's 3D printing resources, guided by Chip Bobbert. It mentions an assessment, FAQ, and supporting materials. It also states that Duke's 3D printers are located in the Innovation Studio on the first floor of the Telecom building. The text is partially cut off at the bottom.

Duke **EXTEND** | DukeExtend: 3DP101 3D Printing at Duke | hrv

View this course as: **Staff**

Home **Course** Discussion Progress Contact Information FAQ Useful Links & Downloads Instructor Bio Instructor

Bookmarks

- Overview and Printing Technology Information
 - Introduction to 3D Printing**
 - Types of 3D Printing Technologies
 - Simple FDM 3D Printing at Duke
 - Troubleshooting and User Maintenance
 - Knowledge check

Overview and Printing Technology Information > Introduction to 3D Printing > About This Course

VIEW UNIT IN STUDIO **Bookmark**

This course is an introduction to Duke's 3D printing resources. Chip Bobbert will guide you through a series of videos explaining which printers are available, what they can make, and how to use them. The course includes an assessment to check your understanding of the information, as well as a FAQ and other supporting materials. After finishing this course, Duke students, faculty, and staff should be able to use Duke's 3D printers to create the objects they've designed.

Duke's 3D printers are located in the [Innovation Studio](#), in the new Technology Engagement Center on the first floor of the Telecom building.

A number of websites are mentioned throughout the course. Links to the relevant ones can be found in text following the appropriate videos and on the "[Useful Links & Downloads](#)" page.

Videos are key

Overview and Printing Technology Information

Introduction to 3D Printing

Types of 3D Printing Technologies

Simple FDM 3D Printing at Duke

Troubleshooting and User Maintenance

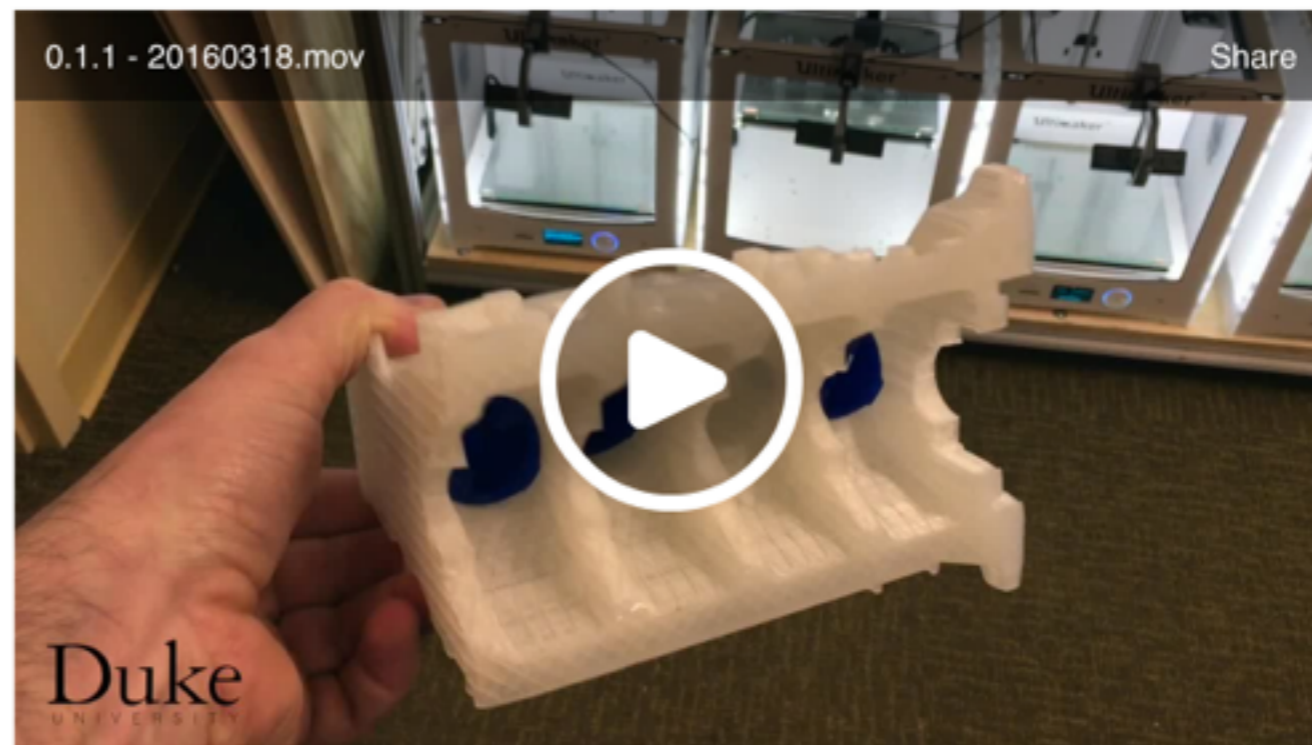
Knowledge check



[VIEW UNIT IN STUDIO](#)

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INTRODUCTION TO 3D PRINTING



Final quiz

BOOKMARKS

- Overview and Printing Technology Information
- Simple FDM 3D Printing at Duke
- Troubleshooting and User Maintenance

Knowledge check

Final

Final Exam due May 17, 2100 at 00:00 UTC

Next steps

Knowledge check > Final > Knowledge Check



[VIEW UNIT IN STUDIO](#)

[Bookmark](#)

This series of questions will check your understanding of 3D printing at Duke University. You need to get 11 out of 13 questions right to pass. However, you can take this as many times as you need to demonstrate your mastery of the materials. Review the videos, key concepts, and FAQ to clarify any confusing concepts. Then click on "RESET" to retake any questions.

[STAFF DEBUG INFO](#)

Final

(13/13 points)

1. 3D printing is a brand new technology that has emerged in the last three years.

True


False ✓

Certificate

EXTEND

Heather Valli, you earned a certificate!

Congratulations! This page summarizes what you accomplished. Show it off to family, friends, and colleagues in your social and professional networks.

 Print Certificate

Duke Extend acknowledges the following student accomplishment

DukeExtend 3DP101 Certificate | Duke Extend

Heather Valli

successfully completed, received a passing grade, and was awarded this
Duke Extend honor Certificate of Completion in

Instructor dash

Instructor Dashboard

[VIEW COURSE IN STUDIO](#)

To gain insights into student enrollment and participation visit [Duke Extend Insights](#), our new course analytics product.

[COURSE INFO](#) [MEMBERSHIP](#) [COHORTS](#) [STUDENT ADMIN](#) [DATA DOWNLOAD](#) [ANALYTICS](#) [CERTIFICATES](#)

COURSE INFO

Enrollment Information

Number of enrollees (admins, staff, and students) by track

Verified	0
Audit	0
Honor	41
Professional	0

Total **41**

Grade book

bdero	0	0
chrislorch	0	0
cjames13	0	0
dwb36	0	0
eab73	85	85
ed142	85	85
elevine	0	0
emueller	0	0
faber	0	0
HowardK	100	100
HR-Valli	0	0
hrv	100	100

Results

- Course launched in August, but with minimal publicity
- More than 90% of the students who've taken the course have passed it
- We'll be meeting with Chip in December to see if his load has lightened

Questions?