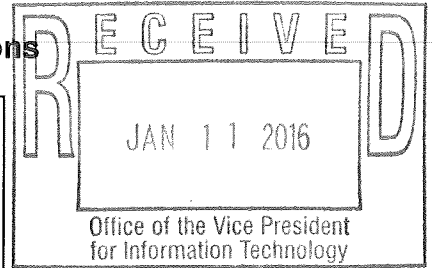


#1601

NDSU Technology Action Plan Request

I. Action Plan Introduction and Authorizations



NDSU ORGANIZATION OR UNIT Mathematics Department		
TITLE OF PROJECT Screencasting mathematics tutorial videos to supplement classroom instruction.		
Project Duration (3 years maximum)	From: 08/16/2016	To: 05/15/2017
Type of Project (Check one)	New: <input checked="" type="checkbox"/> X	Previously Submitted <input type="checkbox"/> Renewal <input type="checkbox"/>
Total Technology Fee Request : \$10,000.00		
Project Director Abraham Ayebo, Faculty, Mathematics & Education	Campus Address: Department of Mathematics - #2750 406F Minard Hall Phone: 231-8104 Fax: E-mail: abraham.ayebo@ndsu.edu	
Name (Type or Print):	Signature	Date
Project Director: Abraham Ayebo		1/11/16
Unit Head: Benton Duncan, Head, Department of Mathematics		1/11/16
IT Division Consultant:	Signature	Date
Luke Prather, Instructional Services Consultant, ITS		1/11/16

Executive Summary (maximum of 175 words)

The mathematics department teaches a variety of courses that are taken by several departments across the university. Most of these courses are large classes that require TAs to have recitation sessions with students. This semester, the department started with the emporium model. The emporium model eliminates all lectures and replaces them with a learning resource center featuring interactive software and on-demand personalized assistance. This project will help provide training for faculty and TAs on how to create math instructional videos using the Tegrity software installed on the Microsoft Surface pro and upload to Youtube or Blackboard to help supplement classroom instruction. Additionally, the project coordinator would use the device to train preservice teachers on how to make instructional videos which is widely used in the K-12 classrooms in recent times.

We will only accept for consideration Technology Action Plan Request forms which are fully completed and signed according to the guidelines listed in the Instructions, pages 1 and 2.

Technology Action Plan Request forms will be opened and reviewed after the submission deadline.

NDSU Technology Action Plan Request

II. Project Overview

1. How does this project meet student needs?

The project will enable instructors and TAs in the mathematics department to make videos to supplement classroom instruction. It will also help prepare preservice teachers on how to make professional instructional videos in the K-12 setting.

2. What audience does this project directly serve? What audience is indirectly served? How many students are affected?

This project will directly serve a vast majority of NDSU students, both graduate and undergraduate. The videos that will be made and posted online will be watched by a wide range of students at NDSU. Preservice teachers will also acquire a very important technology skill.

3. For projects that target a subset of NDSU's students, please describe the possibility for broader application in the future.

This project will impact all students at NDSU who happen to take a class in mathematics or mathematics education.

4. Describe both the immediate and long term impact of this project.

The immediate impact of the project is that students at NDSU will have improved assistance to mathematics. In particular, students who have to commute between school and work will be able to access the supplemental instructional videos wherever is convenient for them, not just when they are on campus.

In the long term, the project will improve the mathematics ability of all NDSU students, which would then translate to them excelling in their various disciplines and work, since mathematical skills are ubiquitous. Additionally, the skills acquired by the TAs and students in the mathematics education program would enable them to produce more videos for the public, much like what Salman Khan has done with the Khan Academy.

5. Who will pay for ongoing expenses following the technology fee funded portion of this project (e.g., who will replace hardware or software after it has reached its end of life)?

This grant request is for equipment needed to train faculty, TAs and preservice teachers to make instructional videos to supplement classroom lecture. All subsequent ongoing expenses will be borne by the mathematics department.

6. Describe how this project will follow NDSU's best practices in information technology. (Please make sure the NDSU IT Division staff you consulted signs in Part I of this form.)

Research has shown that instructional videos are an effective method for students learning of mathematics concepts, since they can always replay the videos several times in a way that would not be possible in a normal classroom. The equipment requested in this proposal will be used appropriately for instructional purposes. The equipment requested can be operated by the project director, who would offer training sessions for math faculty and TAs as well as preservice teachers. The project also meets all expectations for efficient use of equipment at NDSU since the alternative of borrowing equipment would be more time consuming and often inconvenient. Also, the equipment will be kept securely in the mathematics department secretary's office, that will always be locked or under responsible supervision.

7. What service on campus is most similar to the one proposed here? How does this project differ?

Recording capabilities are available in the ITS recording studios. However, the availability is very limited; only one user can use the device at a time. Additionally, the ITS equipment is not portable, thus making the setup less flexible for users who want to create the video tutorials, and almost impossible to offer training to the faculty, TAs and preservice mathematics education students.

NDSU Technology Action Plan Request

III. Project Description (5 pages maximum)

For this project, instructors of mathematics at various levels (especially at the lower level) will be screencasting math lessons to supplement classroom instruction. There will be training sessions for math faculty and teaching assistants on how to make a good screencast. Thus, we propose purchasing 10 copies of Microsoft Surface Pro 4 along with the necessary accessories (memory cards, keyboards and cases). The technology used for screen recording (Tegrity software) will be obtained from the Technology Learning and Media Center (TLMC).

By providing the funding for this project, the NDSU Math Department will be able to fulfill its obligation to meet the students' diverse academic needs for supplemental instruction on math concepts. Consequently, students' grades, graduation rates, and retention will be improved as a result of the screencasting resources that will be made accessible to students. Also, the skills acquired by the TAs and students in the mathematics education program would enable them to produce more mathematics instructional videos in the future for the public.

NDSU Technology Action Plan Request

IV. Milestones

List the date for each project milestone. These milestones should represent the *significant* accomplishments that will be associated with the action plan. For each milestone, please indicate its expected outcome and the means for assessing that outcome. (The table may be extended as needed.)

	<u>Date</u>	<u>Milestone</u>	<u>Expected Outcomes</u>	<u>Means of Assessment</u>
1.	August 31, 2016	Equipment and accessories purchased	All equipment received and installed	Inventory checklist
2.	September 12, 2016	Hold training session for TAs	All interested TAs trained	TAs level of confidence
3.	September 30, 2016	Hold training session for faculty	All interested faculty trained	Instructors' level of confidence
4.	October 14, 2016	Faculty & TAs start renting equipment to record their own instructional videos	At least 10 faculty and TAs will use equipment	Usage log
5.	January 12, 2017	Hold training session for new TAs	New TAs who are interested are trained	Tegrity
6.	February 2 - May 15, 2017	Instructional session of screencasting in math methods class for preservice teachers	Preservice math education students are trained and given projects to work on	Usage log & Semester project artifacts

NDSU Technology Action Plan Request

V. Supporting Documentation

NDSU Technology Fee Action Plan Request

VI. Budget

(double-click on the form to begin entering data)

1.	NDSU ORGANIZATION OR UNIT			
2.	PROJECT DIRECTOR(S) (Must be NDSU faculty or staff)			
3.	SALARIES AND WAGES			
	Personnel description	Number employed	Number of months	Funds Requested
	A. Staff			
	B. Graduate students			
	C. Undergraduate students			
4.	TOTAL SALARIES AND WAGES			\$0.00
5.	FRINGE BENEFITS			
6.	TOTAL SALARY, WAGES AND BENEFITS			\$0.00
7.	EQUIPMENT			
	A. 128 GB, 4 GB RAM, Intel Core i5 Microsoft Surface Pro 4 (10 at \$998.99 each)			9,989.90
	B. Surface Pro 4 Case, Snugg™ Leather Sleeve Case (10 at \$29.99 each)			299.90
	C. Professional Ultra SanDisk 64GB MicroSDXC Microsoft Surface Pro 2 card (10 at \$29.75 each)			297.50
	D. Microsoft Surface Pro 4 Type Cover (10 at \$124.95 each)			1,249.50
	E.			
	F.			
	G.			
	H.			
8.	TOTAL EQUIPMENT			\$11,836.80
9.	MATERIALS AND SUPPLIES			
	A.			
	B.			
	C.			
	D.			
	E.			
	F.			
	G.			
	H.			
10.	TOTAL MATERIALS AND SUPPLIES			\$0.00
11.	TOTAL TECHNOLOGY FEE REQUEST			\$11,836.80
12.	MATCH (Describe in Match Section)			
13.	TOTAL PROJECT EXPENDITURE			\$11,836.80

NDSU Technology Action Plan Request

VII. Budget Justification

The project expenditure is \$11,836.80 for the purchase of ten 128 GB, 4 GB RAM, Intel Core i5 Microsoft Surface Pro 4 devices at \$998.99 each, as well as the necessary accessories. The number of devices (10) is based on the number of preservice teachers in the math education program, as well as the number of instructors who would do the screencasting for students.

NDSU Technology Action Plan Request

VIII. Budget Match

1. Attempted Budget Matches:

2. Actual Budget Matches:

The mathematics department would provide a match of \$1,836.80. Thus the requested amount is \$10,000.00.

3. Additional Budget Match information: