Proposal for Upgrading Computer Science Classroom Projection and Audio Systems in LOV103, LOV016, and MCH202

Project Description

Classroom LOV103 is used primarily for lectures. The computer-equipped classrooms LOV016 and MCH202 are currently used primarily for lectures, recitations, and in-class hands-on practices, all of which are open to graduate and undergraduate students taking Computer Science courses. Most teaching activities in these rooms require the use of the current projection systems.

The first issue is the projectors in use are standard NEC PA600 projectors with a native resolution of 1024x768 and support for HDMI version 1.3. While this is adequate for general PowerPoint presentations and lecture notes, the outputs from professors' in-class practice demonstrations and live coding exercises are often difficult or impossible to read from the back of the classrooms. Such exercises feature densely packed lines of text which the projector resolution cannot reliably display legibly. Many of the classes held in these rooms require that students be assigned to individual machines, including machines located in the back of the classrooms. Even students without visual impairments can have difficulty reading the text.

The second issue with current classrooms is that the audio assistance systems are either broken or altogether absent. Classroom LOV103 has an audio assistance system that was installed in the late 1990s. A year ago, we added a wireless microphone system to the old audio system but we have to constantly deal with compatibility issues. LOV016 and MCH202 have no audio systems installed. In the past, we used a portable speaker in MCH202, but it is no longer functioning. Computer-equipped classrooms are often noisy due to equipment and keyboard noises. Even students without hearing disabilities can have difficulty hearing a lecturer. Professors have to raise their voices so students sitting in the back of the classrooms can hear them. Audio assistance systems can help reduce professors' stress on their voices and help students to better hear the lectures.

The third issue is that current projection systems do not support the latest HDMI 2.0 data signals. Classes like "Computer Graphics", "Principles and Algorithms of Computer Vision", "Software Engineering in Graphics" cannot use the projection system to showcase the latest 4k multimedia presentations. Professors have to show their presentations on small laptop screens or use a VGA interface with lower video quality in order to be compatible with our projection systems.

We would like to replace the projection systems currently installed in three classrooms with 4k projection systems, which include Optoma 4K550 UHD Professional Installation Projectors, HDMI cables, and 137" 16:10 ratio screens. Optoma 4k550 has a native resolution of 3840x2160 and support for HDMI 2.0 signals. It can display 10 times more detail than our current projectors. We would also like to install audio assistance systems and replace current instructor computers to support the 4k resolution.

Impact of this project

Most Computer Science courses and recitations are taught in these three classrooms. With the latest video display and audio assistance systems, our professors will be able to give our students the best in class learning experience.

Project Plan

We propose to purchase three sets of Optoma 4k550 UHD projectors, 137" 16:10 projector screens, audio assistance systems, and necessary accessories and installations for $40,901.

We also propose to purchase three computers for $6,160. Total cost of this project is $47,061.

Ongoing Support

Replacement lamps and filters will be covered by the departmental budget. Computer installation and configuration will be provided by the Systems Group.
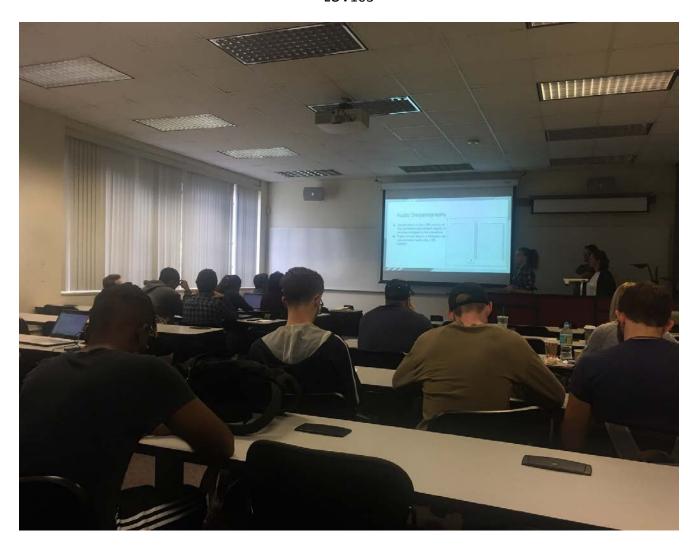
Description of the project team

The project team consists of the Systems Group of Computer Science Department. The project will be led by Yu Wang and Gabriel de la Pena. Mr. Wang has over 18 years of experience in supporting large computer and network systems. Mr. de la Pena has 13 years of experience in supporting classrooms and laboratory computers.

Supporting Documents

1. Images of current classrooms projection systems

2. Projector and audio systems quote

3. Professional Installation quote

4. Instructor's computers quote

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Fax: (813) 882-9508

To:	Yu Wang	Date:	12/7/2018
Company:	FSU College of Social Work	Phone:	(850) 644-4290
Address:	52 Johnston Building	Fax:	
	Tallahassee, FL 32306	Email:	yuwang@cs.fsu.edu

Item Number	Item Description	Qty	Unit Price	Extended Price
OPT4K550	PROJECTOR, 4K/UHD 5000 LUMEN 13LB DLP 10000:1 CONTRAST HDR	3	$5,582.25	$16,746.75
CHIRPAUW	MOUNT, UNIVERSAL "RPA" SERIES CEILING - WHITE	3	$114.34	$343.02
CHICMS440	ENHANCED LIGHTWEIGHT SUSPENDED CEILING KIT-WHITE	3	$67.53	$202.59
DAL70116LS	SCREEN, 72.5"x116" TNSD ADV ELECTROL,16:10 WF, HC DA-MAT,LVC	3	$2,950.00	$8,850.00
DAL38886	SWITCH ASSY, SMART MTR WHITE CTN FOR 38885 SMART MTR KIT	3	$65.25	$195.75
SHUBLX24PG58H9	MICROPHONE SYSTEM, BLX24 SINGLE CHANNEL, PG58 MICROPHONE	3	$267.19	$801.57
SHUBLX14CVLJ10	MICROPHONE, LAVALIER WIRELESS SYSTEM W/CVL/REC, TRANS,	3	$267.19	$801.57
SHUSCM268	MIXER, 4-CHANNEL W/4-XLR INPUTS & 4-RCA INPUTS	3	$249.38	$748.14
EXT4212013	SPEAKER, CEILING W/ TRANSFORMER, FF 120T (PAIR)	6	$275.00	$1,650.00
TOAP912MK2UL	AMPLIFIER, 120W 1 MODULE PORT BLACK (2U)	3	$522.50	$1,567.50
CABLE KIT		3	$299.00	$897.00
MISC CABLE\CONNECTORS		3	$99.00	$297.00

Preliminary Pricing

The shipping amount will be calculated at the time the order is placed.
Equipment is sold F.O.B. origin. All shipping charges will be prepaid and
added to the invoice. Buyer is responsible for paying all shipping
charges.

| | Total | $33,100.89 |

PRECISION TECHNOLOGY INSTALLATIONS, LLC

QUOTE: 20181206-11

12/06/18
Don Sherry
6850 Donerail Tr.
Tallahassee, FL 32309
(850) 566-2211
donsherry@pti-tally.com

Jobsite: FSU Dept of Computer Science Room LOV 103

Scope of Work: Installation of Audio/Visual System for Classrooms designated by Client consisting of the following:

- Ceiling-Recessed Electrical Screen with electrical connections and Control Switch. Area of Screen location must have a minimum of 8" Clearance above designated location free of any obstructions. If location does not have adequate space above ceiling for the recess installation, then an Electric Wall Mounted Screen will be utilized. **Labor Cost $800**
- Ceiling Mounted Projector to include an electrical outlet for projector to display onto Screen. If room doesn't have standard drop ceiling and sheetrock walls then additional mounting cost may be applied. For Concrete application all cabling will require placement into Panduit Raceway and will be based on liner feet used for this application
Routing all cabling from projector to wall plate(s) located at designated location by client. Also will include connection of end user cabling for designated CPU and Laptops as required for display output. **Labor Cost $1400**
- Installation of ceiling or wall mounted Speakers at locations that best work for audio distribution.
Installation of Wireless Microphones (Lapel and HH) with receivers located at rack or podium that is currently present in the classroom. If podium or cabinet has rack mounting the equipment will be rack mounted. If no rack

rails are present, then equipment will be placed in cabinet on shelving provided.

Installation of an Amplifier to provide output of audio to the ceiling or wall mounted speakers.   **Labor Cost $400**

- Scope of work will include recording all equipment Serial numbers and testing to verify proper operation of system prior to the completion of installation.

All trash/recycling will be removed from the site and work area will be cleaned prior to the completion of the installation.

Total Cost $ 2600

PRECISION TECHNOLOGY INSTALLATIONS, LLC

QUOTE: 20181206-10

12/06/18
Don Sherry
6850 Donerail Tr.
Tallahassee, FL 32309
(850) 566-2211
donsherry@pti-tally.com

Jobsite: FSU Dept of Computer Science Room LOV016

Scope of Work: Installation of Audio/Visual System for Classrooms designated by Client consisting of the following:

- Ceiling-Recessed Electrical Screen with electrical connections and Control Switch. Area of Screen location must have a minimum of 8" Clearance above designated location free of any obstructions. If location does not have adequate space above ceiling for the recess installation, then an Electric Wall Mounted Screen will be utilized. **Labor Cost $800**
- Ceiling Mounted Projector to include an electrical outlet for projector to display onto Screen. If room doesn't have standard drop ceiling and sheetrock walls then additional mounting cost may be applied. For Concrete application all cabling will require placement into Panduit Raceway and will be based on liner feet used for this application
Routing all cabling from projector to wall plate(s) located at designated location by client. Also will include connection of end user cabling for designated CPU and Laptops as required for display output. **Labor Cost $1400**
- Installation of ceiling or wall mounted Speakers at locations that best work for audio distribution.
Installation of Wireless Microphones (Lapel and HH) with receivers located at rack or podium that is currently present in the classroom. If podium or cabinet has rack mounting the equipment will be rack mounted. If no rack

rails are present then equipment will be placed in cabinet on shelving provided.

Installation of an Amplifier to provide output of audio to the ceiling or wall mounted speakers. **Labor Cost $400**

- Scope of work will include recording all equipment Serial numbers and testing to verify proper operation of system prior to the completion of installation.

  All trash/recycling will be removed from the site and work area will be cleaned prior to the completion of the installation.

Total Cost $ 2600

PRECISION TECHNOLOGY INSTALLATIONS, LLC

QUOTE: 20181206-12

12/06/18
Don Sherry
6850 Donerail Tr.
Tallahassee, FL 32309
(850) 566-2211
donsherry@pti-tally.com

Jobsite: FSU Dept of Computer Science Room MCH 202

Scope of Work: Installation of Audio/Visual System for Classrooms designated by Client consisting of the following:

- Ceiling-Recessed Electrical Screen with electrical connections and Control Switch. Area of Screen location must have a minimum of 8" Clearance above designated location free of any obstructions. If location does not have adequate space above ceiling for the recess installation, then an Electric Wall Mounted Screen will be utilized.   **Labor Cost $800**
- Ceiling Mounted Projector to include an electrical outlet for projector to display onto Screen. If room doesn't have standard drop ceiling and sheetrock walls then additional mounting cost may be applied. For Concrete application all cabling will require placement into Panduit Raceway and will be based on liner feet used for this application
Routing all cabling from projector to wall plate(s) located at designated location by client. Also will include connection of end user cabling for designated CPU and Laptops as required for display output.
                    Labor Cost $1400
- Installation of ceiling or wall mounted Speakers at locations that best work for audio distribution.
Installation of Wireless Microphones (Lapel and HH) with receivers located at rack or podium that is currently present in the classroom. If podium or cabinet has rack mounting the equipment will be rack mounted. If no rack

rails are present, then equipment will be placed in cabinet on shelving provided.

Installation of an Amplifier to provide output of audio to the ceiling or wall mounted speakers. **<u>Labor Cost $400</u>**

- Scope of work will include recording all equipment Serial numbers and testing to verify proper operation of system prior to the completion of installation.

All trash/recycling will be removed from the site and work area will be cleaned prior to the completion of the installation.

<u>Total Cost $ 2600</u>

You have saved an eQuote 1028497083840

An eQuote is now saved in your Dell Online Store.
This will be held for 60 days and will expire on 02/04/2019

Your eQuote has been sent to:
Emailed to: yuwang@cs.fsu.edu
yuwang@cs.fsu.edu

To retrieve this eQuote
Login to Premier
Sign in to Florida State University SpearMart
Click on "Quotes" in the top menu bar and search for eQuote number 1028497083840

eQuote Name	James Wang
Saved By	yuwang@cs.fsu.edu
eQuote Description	
Authorized Buyer	
Notes/Comments	
Account Name	Florida State University SpearMart
Contract Code	29ABG

Shipping Info
FSU MC 2391 FINANCE DEPT
UCA-5607 UNIVERSITY CTR
PAYABLES / DISBURSEMENTS
TALLAHASSEE, FL 32306-2400
(850) 644-5021

Billing Info
FSU MC 2391 FINANCE DEPT
UCA-5607 UNIVERSITY CTR
PAYABLES / DISBURSEMENTS
TALLAHASSEE, FL 32306-2400

eQuote Summary

Description	Quantity	Unit Price	Subtotal
OptiPlex 7060 MT	3	$1,255.89	$3,767.67
Dell UltraSharp 27 4K Monitor - U2718Q, 68.5cm (27")	3	$562.39	$1,687.17
		eQuote Subtotal	$5,454.84

Shipping*	$0.00
Shipping Discount*	$0.00
Tax*	$0.00
Environmental Disposal Fee*	$0.00

eQuote Total* $5,454.84

*The eQuote total, including applicable taxes and additional fees, may be viewable online.

eQuote Details

Description	Quantity	Price
xctoo7060mtusr	OptiPlex 7060 MT	3	$6,076.89
Premier Discount		**$2,309.22**
(Unit Price after discount: $1,255.89 ea.)		$3,767.67

Module	Description	Product Code	Sku	ID
Processor	Intel Core™ i5-8500 (6 Cores/9MB/6T/up to 4.1GHz/65W); supports Windows 10/Linux	GGDQJ90	[338-BNZU]	146
OptiPlex 7060 MT	Optiplex 7060 Mini Tower XCTO	GEL2Q5H	[210-AOKJ]	1
Operating System	Ubuntu Linux 16.04	G3E9WNP	[605-BBNH]	11
Microsoft Office	No Productivity Software	GEKH8UQ	[630-AAPK]	1002
Memory	16GB 2X8GB DDR4 2666MHz UDIMM Non-ECC	GLPG2UO	[370-AEBG]	3
Hard Drive	M.2 256GB SATA Class 20 Solid State Drive	GCYLRW3	[340-ABIG] [400-AWFS] [773-BBBC]	8
Additional Hard Drive	No Additional Hard Drive	G780XKR	[401-AANH]	637
Video Card	NVIDIA GeForce® GTX 1050, 2GB (DP/HDMI/DL-DVI)	GKBP7HA	[490-BEGF]	6
CD ROM/DVD ROM	8x DVD+/-RW 9.5mm Optical Disk Drive	G589BYA	[325-BCXM] [429-ABFH]	16
Additional Storage Devices - Media Reader	No Media Card Reader Selected	GW2K1D6	[379-BBHM]	10
Wireless	Intel® Wireless-AC 9560, Dual-band 2x2 802.11ac Wi-Fi with MU-MIMO + Bluetooth 5 with Internal Ante	G1CB2IH	[555-BDZU] [555-BDZV]	19
Driver	Intel Wireless 9560 2x2 vPro Driver	GV4IC83	[555-BECT]	7
PCI Card	No Parallel or Serial Port	GVEYOQ7	[492-BBFF]	698
Chassis Options	OptiPlex 7060 Tower with 260W up to 85% efficient Power Supply (80Plus Bronze)	G67A9OF	[329-BDSK]	116
Keyboard	Black Dell KB216 Wired Keyboard	GZDPBC1	[580-ADJC]	4
Mouse	Dell USB Laser 6-Button Mouse	GVN0A53	[570-AACQ]	12
Back Cover	Secure Cable Cover, Mini Tower	GFZAD26	[325-BBTM]	376
Cables and Dongles	No Adapter	GKRDEM4	[470-AAJL]	592
External Speakers	No External Speaker	GTNM7E2	[817-BBBC]	200095

Module	Description	Product Code	Sku	ID
Non-Microsoft Application Software	No Additional Operating System Software	G9RTEX8	[640-BBJD] [658-BDVQ]	1003
Operating System Recovery Options	OS-Windows Media Not Included	GLA9OQ1	[620-AALW]	200013
E-Star	Energy Star	G6J34SM	[387-BBLW]	122
Raid Connectivity	No RAID	GS3UFWA	[817-BBBN]	1009
Network Card	No Network Card	G9MQCN3	[555-BBJO]	13
FGA Module	No FGA	NOFGA	[817-BBBB]	572
Placemat	MOD,PLCMT,QSG,7060,MT,DAO1	GR0FOKM	[340-CDYY]	60
Systems Management	Intel® vPro Technology Enabled	GFTZC4U	[631-ABQQ]	49
Protect Your New PC	No Security Software	NOSS	[650-AAAM]	1014
Optical Software	PowerDVD Software not included	GI5LS2C	[632-BBBJ]	597
TPM Security	Trusted Platform Module (Discrete TPM Enabled)	GJMDKT6	[329-BBJL]	297
Regulatory Label	Regulatory Label 7060 Mini Tower	GSX8752	[389-CXGK]	676
Processor Branding	8th Gen Intel® Core™ i5 vPro™ processor label	GM3BVJZ	[389-CGJO]	749
Power Cord	System Power Cord (US)	GA5894N	[450-AAOJ]	20
Hard Drive Software	NO INTEL RESPONSIVE	GH8DSLC	[551-BBBJ]	707
CompuTrace Offerings + Stoptrack Label	No Computrace	GO1F2XY	[461-AABF]	697
UPC Label	No UPC Label	G8WGTYN	[389-BCGW]	292
Documentation/Disks	Safety/Environment and Regulatory Guide (English/French Multi-language)	G7RB0GY	[340-AGIK]	21
Canada Ship Options	US No Canada Ship Charge	G3IA0L8	[332-1286]	111
Packaging	Ship Material for OptiPlex Tower	G7G214X	[340-CDWT] [389-BBUU]	465
Additional Video Ports	Additional HDMI 2.0b Video Port for Tower	G7L05F2	[382-BBFM]	495
Transportation from ODM to region	Standard shipment	GQT8IGC	[800-BBIO]	200080
Hardware Support Services	4 Years Hardware Service with Onsite/In-Home Service After Remote Diagnosis	G5R3XB7	[812-3886] [812-3889]	29

u2718qcc | Dell UltraSharp 27 4K Monitor - U2718Q, 68.5cm (27")	3	$2,219.97
Premier Discount		**$532.80**
(Unit Price after discount: $562.39 ea.)		$1,687.17

Module	Description	Product Code	Sku	ID
Dell UltraSharp 27 4K Monitor - U2718Q	Dell UltraSharp 27 4K Monitor - U2718Q	U2718Q	[210-AMLM]	1
Hardware Support Services	3 Years Advanced Exchange Service	AE3Y	[815-2532] [815-2533]	29

eQuote Subtotal	$5,454.84
Shipping*	$0.00
Shipping Discount*	$0.00
Tax*	$0.00
Environmental Disposal Fee*	$0.00

eQuote Total*	**$5,454.84**

*The eQuote total, including applicable taxes and additional fees, may be viewable online.

Let's connect.

Student Technology Fee Budget Template for 2018-2019 Project Funding Proposal

Project Title: **Upgrading Computer Science Classroom Projection and Audio Systems in LOV103, LOV016, and MCH202**

Organization or College: **Arts and Sciences**

Department or Unit: **Computer Science**

Project Period   Start Date: 7/1/2019   End Date: 8/30/2019

I. Senior/Key Personnel

List senior and / or key personnel whose compensation will be funded through project non-recurring funds

	First Name	Middle Name	Last Name	Project Role	Requested Salary	Fringe Benefits	Funds Requested
A.							
B.							
C.							
D.							
Total Funds Requested for Senior/Key Personnel							$ -

II. Student & Other Personnel

	Requested Salary	Fringe Benefits	FTE	Funds Requested
Graduate Students				
Undergraduate Students				
Other Personnel				
Total Funds Requested for Students & Other Personnel				$ -

Total Salaries, Wages & Benefits $ -

Student Technology Fee Budget Template for 2018-2019 Project Funding Proposal

III. Equipment

List items and dollar amounts for each item, including software, (or multiple items of the same type with a total cost of) over $2,000 - add lines as needed

Item Description	Funds Requested
A. Optoma 4K550 UHD Projectors, Screens, and Audio systems	$33,101.00
B. Dell OptiPlex 7060 MT $1819 each, Total 3	$5,455.00
C. Audio/Visual Systems Installations, $2600 each room. 3 rooms total	$7,800.00
D.	
Total for items over $2,000	**$46,356.00**

Total for Additional items (less that $2,000 each)	
ITS Software License $235 each, Total 3	$705
Total Equipment Costs	**$47,061.00**

IV. Other Costs

	Funds Requested
Materials & Supplies	
Consultant Services	
Equipment or Facility Rental/Use Fees	
Additional Project Costs (describe in budget justification)	
Total for Others Costs	$ -

Total Project Cost	$ 47,061.00