UNIVERSITY OF LOUISIANA
AT LAFAYETTE

STEP Committee

Technology Fee Application

College of Engineering Repair and Upgrade Materials Testing Laboratory
Title

Jamal Khattak, Mark LeBlanc
Name (Submitter)

UL Lafayette College of Engineering

Department of Chemical Engineering
Department of Civil Engineering
Department of Electrical & Computer Engineering
Department of Industrial Technology
Department of Mechanical Engineering
Department of Petroleum Engineering
Organization

Signature of Dean or Administrative Head

Title: College of Engineering Repair and Upgrade of Materials Testing Lab
Date: 12-15-19
Name (Contact Person): Mark LeBlanc
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Department/College/Org: Civil Engineering/Engineering

ABSTRACT:

The purpose of the Grant is to upgrade the existing 20,000 pound force Materials Testing Laboratory equipment. This equipment consists of a load frame with associated computer, dedicated software, electronic controller, and hydraulic pump. The load frame is used to apply forces on specimens in order to determine the physical strengths and limits of the particular specimen. The college of engineering has recently refurbished the load frame at a cost of $17,000.

While the load frame should continue to provide service for many years, the computer, electronic controllers and software will not. The computer and electronics are 12 years old. The computer used to communicate with the controller is custom configured by the manufacturer (MTS) with unique hardware and software. The operating system, software and hardware are no longer supported. This equipment is central the instruction of all materials related course work.

College of Engineering: Repair and Upgrade of Materials Testing Laboratory

A. Purpose of Grant

The purpose of this grant is to upgrade the electronics of the 20,000 lb force load frame. The electronic controller and associated software for the load frame is obsolete and no longer supported by the manufacturer.

Impact on Student Body
This initiative will impact students in the following ways:

1. Lab requirements for Engineering course work cannot be met without the use of this equipment.
2. Student projects from all Departments can benefit from having access to this equipment as it can verify and prove calculations and designs.
3. Students may participate in Materials Testing needed from community businesses. This would provide the students with exposure to our local industry.
4. While not in the College of Engineering, students from the Geology Department could benefit from the use of this equipment in Rock Mechanics.
5. ABET accreditation. Inoperable and obsolete labs do not make a good impression during accreditation inspections. Possessing a modern and fully functional Materials Testing Lab would be an added bonus to the College.

B. The Projected Lifetime Of Enhancement

This project is expected to benefit students for at least the next ten years.
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C. Person(s) Responsible for Project

1. Implementation: Dr. Jamal Khattak, Mark LeBlanc
2. Installation: MTS Corporation
3. Maintenance: MTS Corporaton
4. Operation: Mark LeBlanc
5. Training: Mark LeBlanc, Dr. Jamal Khattak

Qualifications:
Mark LeBlanc – Mark is the Laboratory Assistant for the Civil Engineering Department. He has maintained labs in the College of Engineering since 1997. He attended MTS equipment factory training class in 2000.

Dr. Jamal Khattak- Dr. Khattak is an Associate Professor in the Department of Civil Engineering. Dr. Khattak joined the Civil Engineering Department in 2000.

D. Budget

The budget proposal is presented in the table provided. Budget Proposal

1	**Software**	**$8019.00**
2	**Calibration**	**$2173.00**
3	**Installation**	**$2241.00**
4	**Travel**	**$1884.00**
5	**Hardware**	**$36,685.00**
6	**Training**	**$249.00**
7	**Discount**	**-$2562.55**
		Total $48,688.45

5. Timeline:
Year 1:
Complete order of all equipment, software, and supplies. Schedule installation with MTS Corporation.
Year 2:
Maintain equipment.
Year 3:
Maintain equipment.

6. Additional information relevant to this application.
N/A

7. Previous funded STEP projects:

Khattak, J., **LeBlanc, M., Ozbirn, H.** (April 2006) College of Engineering Repair and Upgrade Materials Testing Laboratory.
Funded through UL Lafayette STEP Committee. Funded amount: G298R2
$77,900.00

LeBlanc, M., McManis., K. (April 2006) Civil Engineering Upgrade and Maintenance of Computer Labs.
Funded through UL Lafayette STEP Committee. Funded amount: 320162
$30,000

LeBlanc, M., Sun, X. (April 2006) Upgrade of Computer Labs.
Funded through UL Lafayette STEP Committee. Funded amount: G298H2
$1600.23

LeBlanc, M., Sun, X., Lyman, S. & LeBlanc, L. (September 2002) Upgrade of Computer Labs.
Funded through UL Lafayette STEP Committee. Funded amount: G2985U
$18,422.00

LeBlanc, M., Sun, X., & Lyman, S. (April 2002). Upgrade of Computer Labs.
Funded through UL Lafayette STEP Committee. Funded amount: R2983H

$12,680.00

Pons, J., & Sun, X. (September 2000). Enhancing the Computational Capabilities of The Civil Engineering Department.
Funded through UL Lafayette STEP Committee. Funded amount: R29852
$23,603.00.