

**Team:** CSM #2

**Project:** Machine Shop Electronic Access/Inventory System

**Client:** Dr. Kevin Moore

### Description / Vision

The College of Engineering and Computational Sciences maintains a machine shop in the basement of Brown building. The machine shop is home to many machines which require specific training to ensure safe operation. In addition, the machine shop contains many other tools which are occasionally borrowed by students and staff for various purposes around campus.

Our project is an electronic access-control and inventory system which keeps track of which students are certified for which machines, keeps a record of all machines and tools, and allows students and staff to check out tools when needed. The CECS machine shop staff will be administrators with the ability to edit the certification status of users in the system, remove users, and update the inventory system (add/remove machines/tools from the system). In addition, a log will be kept which details the time in/out for all users, the machines they used, and any tools they checked out.

Our software will help create a safer and more organized environment in the machine shop by keeping track of machine safety certifications and allowing the machine shop staff to have fast and accurate access to certification information and the inventory database.

### Requirements

#### Functional

- Basic User
  - Blastercard Login / Logout
  - Tool Check-in / Check-out
  - Machine Usage Certification Check
  - View Machine Certifications
  - View Checked Out Tools
  - View Available Tools
- Administration (Includes Basic User Functions)
  - Data Entry
    - Add / Remove Tools
    - Add / Remove Machines
    - Add / Remove Users
    - Add / Remove Admin
    - Add / Remove Certifications
  - Lock Out User
  - Generate Reports
    - View Log
    - View All Machines
    - View All Tools
    - View All Users

#### Non-Functional

- Use Magnetic Strip Card Reader
- Must be open to extension
- Install system in Machine Shop

## Potential Risks

Technology Risk	Proposed Solution
Card Reader Failure	Keyboard Input / Replace
Touch Screen Driver Failure	Mouse Input
Monitor Failure	Replace
Database Failure	Server / Database Backup
User Failure	Instruction Manual
Access to Blastercard Data may be denied	Manual Data Entry For All Users
Access to Mines Server for Database Hosting may be denied	Host Locally
May experience issues installing touch screen driver and windows 7	Continue with non-touch approach

Skill Risk	Proposed Solution
Minimal MongoDB Experience	Research
No experience interfacing Java and touch screen	Research