Western Engineering

MME 4499 – Mechanical Engineering Capstone Project Proposal Document

Name of Sponsor	Iron Mountain

Title of Project

Design of an Automation Cell for Pathology Slide Scanner Cartridge Loading

Brief Project Description

Across North America and around the world, Iron Mountain holds more than 1 billion archived pathology slides on behalf of our customer. Daily, we perform retrieval of selected slides from our temperature and humidity-controlled vaults and deliver them to our customers.
Iron Mountain is now moving into the digital pathology space with our digital pathology solutions, where we eliminate the physical delivery of slides and replace it with a digital image which we host in our private Iron Cloud repository.

The transition to digital delivery requires **millions** of slides to be picked out of their long-term storage boxes and loaded into cartridges for scanning. Once the scanning is completed, the slides must then be moved back into their archival storage boxes. This human based activity is both repetitive and costly. Iron Mountain is in the process of increasing our slide scanning capacity to over 10,000 slides per day, allowing us to scan more than 1 million slides in the next 12 months.

Iron Mountain is interested in sponsoring the design and development of a robotic system to perform these handling steps instead of a human.

Desired Project Deliverables

Full design of an automated pathology slide handling system, with engineering drawings and proposed next steps should Iron Mountain wish to develop this into a product. As mentioned, this could include prototyping of the system or parts of the system including the physical layout and/or the slide gripping solution.