MS-ETM Spring 2024 Graduating Cohort Project Showcase



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Utah Valley University Master of Science Engineering and Technology Management



Master of Science Engineering and Technology Management

UVU's Master of Science in Engineering and Technology Management (MS-ETM) is an applied graduate program focused on preparing engineering technical professionals to become leaders in the management of technology in their fields. Participants in the program learn decision-making, evaluation, and implementation strategies for fast-moving, technical management decisions that prepare them for career and business success.

The MS-ETM focuses on real-world applications. Graduate students learn through individual study, collaborative group work, and by putting theoretical concepts into practice. UVU's MS-ETM program provides students with a rigorous, relevant, and practical foundation for their technical management careers. Graduate students in the MS-ETM program complete a culminating project rather than a research-based thesis often associated with a Master of Science. While theory and research are included throughout the program, the culminating projects led by MS-ETM graduate students are relevant, rigorous, and essential to the businesses and organizations they serve.

Applied, Engaged, Project-Based Learning

During the final two semesters of the MS-ETM program, students select, plan, and execute a significant project that pushes them to new levels of performance in a technical management discipline. These projects are led by individual students, involving team members aided by faculty mentoring. This leads to high-performing teams that yield exceptional results.

Corporate Collaboration

MS-ETM graduate students choose projects with significant impact on a business or organization. Typically, this is the company they currently work for. As Faculty, we sincerely appreciate each business and corporation that has supported our students by allowing them to work on timely and relevant projects within their organizations. This collaboration between the university and business helps students grow their careers and professional contributions.

MS-ETM Spring 2024 Cohort

We are pleased to present the graduating cohort for the Master of Engineering and Technology Management for 2024. Students highlighted in this booklet are professionals who are completing their graduate studies while working full-time. Each is expected to receive their MS-ETM master's degree at UVU's Spring 2024 graduation ceremonies.





Anna Joel

Equinox IT Services delivers technical support across a diverse range of technical infrastructures and software solutions. Microsoft 365 stands out as one of these infrastructures that is continually expanding, with an increasing number of our clients shifting towards its usage. It is crucial for us to adapt to the evolving technology and meet the needs of our clients effectively. Introducing a new M365 Management package is our strategy to not only enhance client support but also create an additional revenue source. This revenue can be utilized to offset the costs of providing extra training opportunities for our technical teams, ultimately enhancing their skills and efficiency. This project focuses on defining the support package for sale to our clients and incorporating it into the technician development roadmap, allowing technicians to build skills in supporting the solution.



Brendon King

CallTower, a Telecommunications and UCaaS provider, is expanding internationally to meet increased overseas customer demand. To support this growth, the company is revamping its Support organization's training center. The goal is to provide a hybrid, asynchronous training program for new hires, combining self-guided online learning with mentorship from experienced technicians and engineers. This approach aims to reduce the onboarding and training period from six to nine months to approximately three to four months. Upon project completion, CallTower expects to have a comprehensive training solution that tracks progress, provides feedback, and supports new hires' learning and growth opportunities.





Camron Sherman



Biomerieux is working to eliminate waste and inefficiencies in its Instrument Production facilities. The Design for Manufacturing (DFM) group has proposed implementing a new Manufacturing Execution System (MES), Tulip, to improve processes and products. The cost-benefit analysis shows that eliminating 13% of current quality issues would cover licensing costs, and similar manufacturers have seen a 400% or greater return on investment with Tulip. The first stage of this system, which includes interactive work instructions, smart tooling, and real-time data capture, is set to go live in February during the first of three pre-production runs.





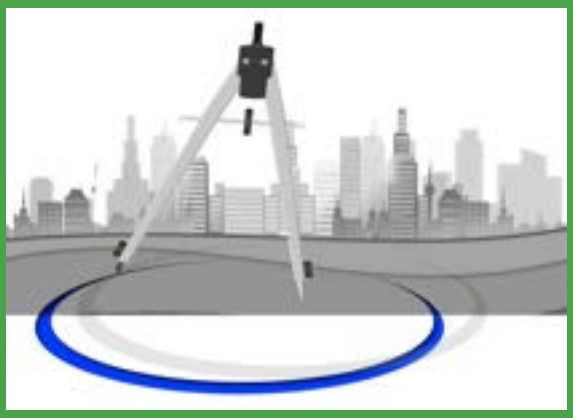
Cayden Bailey



My project focused on employee retention due to the high turnover rate observed in one department in 2023. The department started with 61 employees and ended with 59, but only 27 of the end-of-year employees were with the company at the start, indicating a turnover rate of over 50%. Turnover is costly due to the investment in employee training.

I began my project by sending surveys to current and past employees to understand how the company can improve retention. After extensive research on employee retention, reasons for leaving, and industry retention rates, I have developed plans that, if properly implemented, could significantly increase retention. A small implementation has already occurred, and the turnover rate is currently lower than it was at the same time last year.





Gavin Finch

The Point is a significant project in Utah, envisioned as a 15-minute city and the state's innovation hub. It is being developed on a former prison site and will feature housing, schools, businesses, and entertainment facilities. A key component is an innovation district designed to foster collaboration between universities, students, startups, and entrepreneurs. The current phase of the project is focused on extensive planning and research, without budget constraints, to identify the most needed lab space and equipment. This is being done by liaising with local universities and surveying potential users of the innovation district.

Jacob Wood

This project aims to increase profit and sales opportunities for CES by offering a training program that enhances the skillsets of customers. This program will bring more customers into the store, leading to increased foot traffic, impulse buying, reduced ordering and shipping errors, and improved customer retention. The new training program focuses on skills training and industry certifications for production workers, maintenance teams, and electricians. It promotes courses that offer continuing education credits for electricians, which are required for their license renewal every 2-3 years. CES has partnered with companies that provide extensive training programs to expand customers' understanding and skills in mechanical and electrical concepts related to electronics, motors, and various automation systems. This additional training creates growth opportunities by developing skill sets and offering refresher courses that companies often require for liability reasons.





Noel Casarin-Forrette



This semiconductor project for Texas Instruments aims to decrease the physical characterization lab's (PCL) analysis time per sample by shifting the learning cycle earlier and standardizing analysis procedures. This will be done by integrating a PCL process into the chip design/redesign processes, allowing requirements gathering and the proactive creation of procedures before every new chip design starts being manufactured and needs PCL analysis. Accelerating PCL chip analysis directly impacts how quickly manufacturing issues are understood and decreases a new circuit chip's time to qualification.







Preston Strange

Barry-Wehmiller Flexible Systems, a global manufacturer of automated packaging equipment, is implementing a quality assurance (QA) system to ensure the delivery of high-quality, durable machines. This system includes pre- and post-shipment checks. A 'traveler' record, detailing who built each machine stage and when, will accompany each machine through the shop, enabling the QA department to identify and rectify weak points. The company aims to enhance production success by ensuring all staff are well-trained and understand the quality standards, thereby holding them accountable for their work. The ultimate goal is to deliver high-quality machines, reduce on-site time, save money, increase profitability, and minimize warranty-related trips.



Ryan Semadeni

To meet the increasing demands with Machine Learning (ML), Hill Airforce Base is adding a training program to help new hires and interns learn more about Artificial Intelligence. The training is separated into three difficulties with varying tasks to challenge the user. The tasks can be completed on an individual level or can be adjusted to be accommodated for groups. Our goal is to give incoming employees experience in ML, with different challenges to help educate and build a ML foundation.



Seth Madsen



Equinox IT Services, a managed service provider, has a Cybersecurity and Automated Services team that aims to reduce overhead and maintain cybersecurity compliance and technology health standards. Since 2013, they have significantly improved cybersecurity compliance and health standards while reducing the delivery time for Security Operations Center and Network Operations Center services. Many tasks that used to take hours are now either fully automated or completed in minutes. The team plans to continue improving security compliance and technology health standards through automation. The focus of the project is on business intelligence dashboards that:



1. More effectively communicate metrics and standards to achieve stakeholder outcomes.
2. Integrate automation across multiple roles and teams to help them remove mundane tasks as obstacles to their efficacy and efficiency.
3. Understand in real-time as well as trended where time is spent to show progress of AI/RMM/Automation investments.

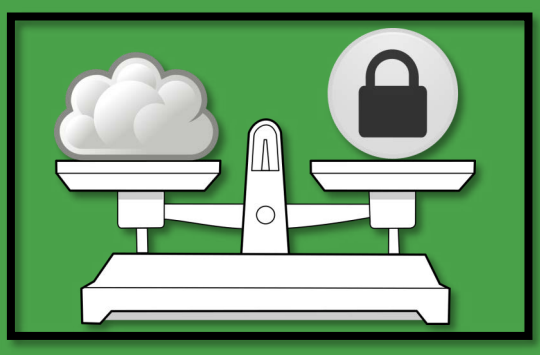
Shaydan Walker



PPM uses point cloud data from laser scanners to provide ‘as-built’ models or digital twins to architects, particularly in ArchiCAD. The “ArchiCAD Customization Initiative” aims to address the time-consuming task of converting models from the company’s template to the clients’, a process that can be challenging for clients new to outsourcing their as-builts. The initiative includes developing an internal conversion process, providing specialized training for BIM modelers, and creating a Standards Guide. The goal is to improve product accessibility and establish the company as the preferred provider for ArchiCAD as-builts. In a competitive market, the company is committed to customer-centric innovation. By removing technical barriers and enhancing user experience, it aims to solidify its status as an industry leader, delivering products that meet the needs of architects and design professionals.







Tyler Voorheis

Equinox provides a wide range of technology support to their clients, from hardware like printers and servers to business-level planning and reviews. The company is focusing on promoting the adoption of Microsoft 365 services among its clients due to the increasing importance of these services and the associated security protections. In response to the surge in data breaches and security issues associated with cloud environments, Equinox is developing training and processes to facilitate client usage of cloud resources while maintaining a secure environment.

The project aims to address the lack of processes and documentation in the adoption of Microsoft 365. It will focus on improving the onboarding, break-fix support, and monitoring of Microsoft 365 resources, which are currently supported in an ad-hoc manner. The goal is to provide better support, faster response times, and stronger security.



Zack Hulsey

My project is to design and implement a rotational training and mentoring program to recruit and retain top engineering talent. The program will:

- Rotate new Engineers in Training (EITs) among different departments and supervisors.
- Assign new Professional Engineers (PEs) as mentors to EITs and design staff.



- Have PEs lead in identifying training needs and sourcing technical experts within the company for trainings.
- Continue mentorship as employees advance in their careers.

The program's success will be measured by Key Performance Indicators (KPIs), including recruitment and retention rates, and feedback from mentor meetings and surveys. These KPIs will help assess if the company's goals are being met and identify areas for improvement.

Zachary Kelley



BD Medical in Sandy, UT, the world's largest producer of IV catheters and vascular products, is central to 70% of US medical procedures and 30% globally. Their complex manufacturing operations involve molding, extrusion, compounding, high-volume assembly, and sterilization, supported by 1200 associates, hundreds of suppliers, and over 900 raw and semi-finished materials.

However, industry supply disruptions, production variability, forecast inaccuracies, and system complexity have led to increased inventory levels, impacting BD's free cash flow and investment capabilities. A cross-functional team is now working to reduce the days of stock (DOS) for excess inventory from 83 to 70, with an ambitious goal of 30 by the end of the fiscal year.



Kyle Merrill - MS-ETM Program Director 2021-2023



I would like to express my deepest gratitude for Kyle's tireless efforts and exceptional leadership in implementing the MS-ETM degree program. His dedication and commitment have been instrumental in getting this program off the ground and ensuring its success over the past three years. Kyle's vision and perseverance have not only created a robust academic platform for students but also set a high standard for future program directors.

Dr. Susan L. Thackeray

Department Chair











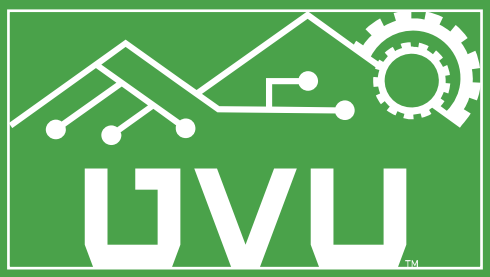




Current MS-ETM Teaching Faculty

- **Pauli Alin**
- **Ahmed Alsharif**
- **Anne Arendt**
- **Maria Blevins**
- **Justin Flanagan**
- **Armen Ilikchyan**
- **Kyle Merrill**
- **Susan Thackeray**





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