Project Showcase

MS-ETM Spring 2023
Graduating Cohort

MASTER OF SCIENCE
ENGINEERING & TECHNOLOGY
MANAGEMENT



Master of Science in 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 and 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 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 important to the businesses and organizations they serve.

UVU's Leading M.S. of Engineering and Technology Management Cohort

The graduate students highlighted in this booklet represent leaders of a new class of graduate student at Utah Valley University. They are the vanguard, the first graduating cohort of UVU's technical management master's degree program. All MS-ETM students are working professionals that have continued their education while working full-time. Each one is expected to receive their MS-ETM master's degree at UVU's Spring 2023 graduation ceremonies.

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, yet typically involve many team members and contributors to the project. These projects are organized and led solely by graduate students with faculty mentoring. This leads to high-performing project teams that yield exceptional results.

Corporate Collaboration

MS-ETM graduate students choose projects with significant impact to 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.





Bruford Reynolds



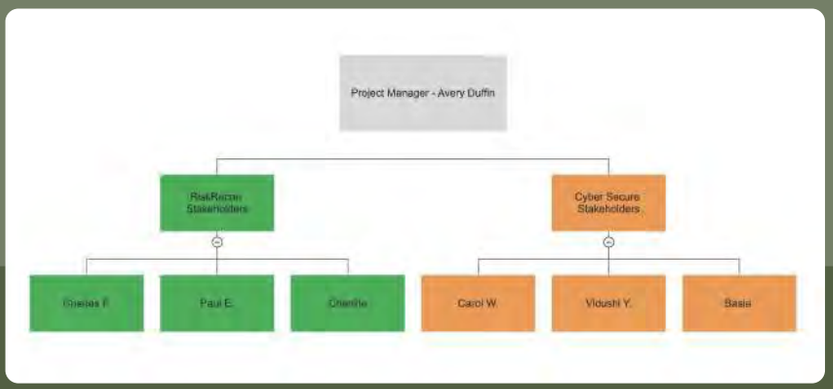
The Mechatronics program at UVU seeks to expand students' understanding and skill sets in mechanical and electrical concepts in automation. This understanding and the skill sets learned are what make students in the Mechatronics program better prepared for the workplace and attractive to companies. An area of particular focus is the need for students to understand torque speed characteristics and the effects of variable loading conditions on motor systems in terms of mechanics and electronics. After much discussion, research, and modeling, a short-term system tailored to three different types of motors was identified as a viable solution. This short-term system can be manufactured in-house, meets current deadlines, and can work for the motors we have in mind while plans and a model are created for a long-term solution that work for all current and future motors the program wishes to use. Artifacts for this project include student table fixturing, motor mount fixturing, dynamic loading flywheels for three motors, and the long-term solution virtual 3D model.



Avery Duffin

This project aims to address the issues stemming from having team Spectre outside of the Cyber Secure org and not treating RiskRecon as a vendor. As a result, there has been a change and collaboration has increased between team Spectre and Cyber Secure. A communication plan has been set up that involves weekly meetings with stakeholders to provide updates on how team Spectre is integrating and collaborating with Cyber Secure. Furthermore, documentation is being provided for processes in working with RiskRecon. As the plan manager, I have organized and maintained communication between stakeholders and am providing the documentation for new processes.





WesTech Engineering's rental fleet is currently composed of 55 individual portable water treatment equipment skids. However, currently customer inquiries have been turned down due to a lack of equipment. Being able to quickly produce more equipment is a high priority. While several things could be done to grow the quantity of rental equipment, developing a reference instruction booklet and a formalized package of detailed fabrication drawings are the two most beneficial. Actual quantitative results for sales and profits will be realized months after this project is complete. However, results are expected to be significant since rental equipment has a high profit margin.



Jim Judd





John Larsen



WHW is a consulting engineering firm that provides HVAC and plumbing design services. The company was formed in 1984 and has grown incrementally ever since. Today the company is seeing rapid growth. Revenues were up 15% this year over last and all production seats are filled.

WHW anticipates additional growth in the years to come, and a new building will allow for double the staff. Specialization and training are needed to formalize the structure of the company. Consulting engineering is a broad field and we have broken it down into manageable pieces that require proficiency. Each employee will own a particular business need or information set. Forbes magazine says that developing your employees is the key to retention. In a survey 93% of employees said that they would stay at a company longer if their careers were invested in. This specialization will help us prepare for the next stage of growth and improve efficiency of production.



Joseph Zambrano

During the Covid-19 pandemic, our business experienced a drastic increase of brand partners promoting the product. That movement caused more people to join the business, and our inventory levels dropped at a rate that no one ever fathomed or planned for. Around that time, we also saw delays in the supply chain that affected getting certain components to make our products. The company made the executive decision to purchase inventory based on the unprecedented demand instead of doing a thorough analysis to see if we have ever experienced a growth like that in the past, or to see if that growth was sustainable over time. Two years have passed, and we are now dealing with a large amount of inventory expiring due to over-purchasing. The business saw a large decrease in sales shortly after the pandemic, and this quantity of inventory was more manageable. Now we are currently doing the research to see what the reasoning for was the decisions that were made, when they were made, and how can we avoid making mistakes like that in the future.



Mallory Duda

Expansion Sales oversees the company's customer base and assists customers in expanding their product usage by selling additional add-on products. The Expansion Sales team receives customer leads from many different sources within the company and are capturing expansion interest through multiple forms across various channels. Each channel takes custom code in order to read the customer's information and direct the lead to the correct Expansion Sales rep. The original process built to distribute leads to reps is outdated and no longer works at a larger scale. It is recommended that the company redo their foundational technical processes to assist with proper distribution and allow for scalability as the company grows and offers more products to customers. In rebuilding how the company distributes leads it will allow them to grow as it removes bottlenecks, increases customer satisfaction, and assists with the moral of the Expansion Sales team.



Mike Gleason

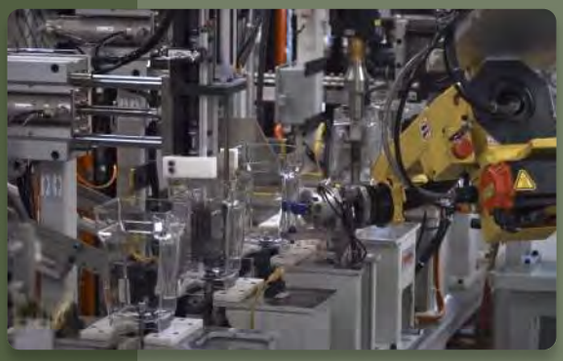
The current supplemental power source used by LiveView Technologies, the EFOY Pro 2400, is being phased out in 2022. While inventory will allow us to maintain production until March of 2023, a new solution must be production-ready when that inventory is exhausted. Depending on the geographical location of the mobile unit, solar availability may be limited and unable to maintain the system's power consumption during prolonged poor weather conditions. Providing supplemental power to these units allows systems to remain operational in poor conditions.

After evaluating potential alternatives, it was determined that the EFOY Pro 2800 would replace the current solution. As part of the project, the engineering team at LVT has been testing different design configurations and evaluating the system's performance and the effect of this change on the total cost of ownership of LVT's LiveUnit.



Nathan Jones

Blendtec currently has an out-of-date automated jar production that is inefficient and has become more unreliable. The data analysis has shown that updating the automated jar line will increase the overall production. The issue that does arise is if this project should stay in-house or if this update process should be consulted out to another company. It will come down to how quickly Blendtec will want this project finished as opposed to the overall price.

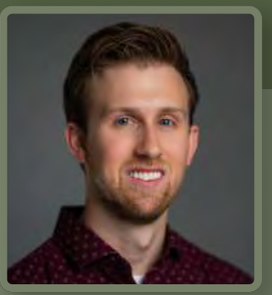


Using a hybrid solution will combine in-house efforts while using an external company as a consultant that can be called upon when needed. Using this solution will help to increase upgrade deployment. We will still have the available assistance of an outside source; this can help reduce any unforeseen issue and also provide valuable information from experienced technicians. Blendtec will also be able to maintain control over the quality of the new line and its end product.



Nick Cromar

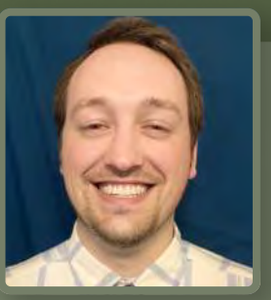
BoxHeads is one of the project groups creating a product through Utah Valley University's e2i program in conjunction with the UVU Entrepreneurship Institute. With the amount of project groups within the program, each needs to prove that they are worthy of receiving continued funding. The BoxHeads team, while continually making progress on the development of their product, is in need of ensuring allocation of sufficient funding. The team needs to determine what they can do to ensure they will be viable for continual funding, including ensuring that there is a designated business plan and that milestones are being met in the progression of the project. The outcome of this project is to check the progress of the BoxHeads team on their progression with creating a business plan and adding better goals for the business aspects of the project. After having been given a recommendation on business needs, the team will be monitored on how/if they utilize the given recommendation.



Shane Salisbury

Simplyscapes is a new company that is looking to expand and finalize their services this year. Simplyscapes Design software is empowering homeowners and professionals to create sustainable yards through an easy-to-use online software that can be customized to any unique landscape. They want to increase their user base and expand their geographical location covered by the software. Simplyscapes owner and employees presented their software at a trade show in Salt Lake City, Utah from January 23-25th, 2023, in hopes of bringing in small landscaping companies and property management companies in the local area. The trade show presentation was successful by creating a large amount of interest and gained new stakeholders. I have also recommended purchasing a billboard ad near developing neighborhoods and creating social media ads targeted at new home buyers and landscapers. Geographic expansion is the next focus with expanding to warmer climates first and then cooler climates because of the longer growing seasons in those areas. Simplyscapes is on track for success by meeting all their milestones and is ready to launch in new markets near you.





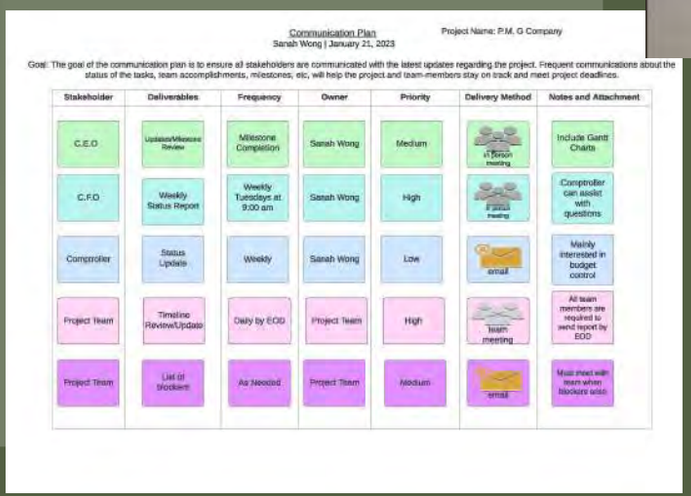
Dexton Graves

Royal Engineering has experienced growth as work continues to pour in. As more work comes in, it is important to spread the load among the employees so as not to overwhelm or overwork anyone. With that being said, we have too much work to be placed on the current number of employees. There is a need to hire, but our training program is nearly non-existent electrically with most of the training being done by project managers who are already overworked. By merely hiring we only increase the workload since training can take anywhere from a few months to a few years. Without an actual program with trackable deadlines and referenceable information, training can be different for everyone and important information can slip through the cracks. On top of this, experienced employees still have questions and situations arise that need answering. This project is about the creation of a trackable autonomous training program where employees will have the opportunity to apply learning and project managers will be able to see the progress of new employees without having to hold their hand every step of the way. The program will be structured within the company database and will allow old and new employees to go back and train themselves whenever needed. This will leave more time for project managers and engineers to answer questions that are outside the scope of standard training. This will decrease training time significantly and will make sure most (if not all) important topics are covered. Monthly engineer trainings for the rest of the company will also be considered to keep up on current topics and problems. It is a completely new training program specifically for the electrical department (new method and everything) with the ability to track and autonomous use to reduce project manager bottlenecks in the company



Sanah Olive Wong





Communication Plan
Sanah Wong | January 21, 2023

Project Name: P.M. G Company

Goal: The goal of the communication plan is to ensure all stakeholders are communicated with the latest updates regarding the project. Frequent communications about the status of the tasks, team accomplishments, milestones, etc, will help the project and team-members stay on track and meet project deadlines.

Stakeholder	Deliverables	Frequency	Owner	Priority	Delivery Method	Notes and Attachment
C.E.O	Updates/Milestone Review	Milestone Completion	Sanah Wong	Medium	in person meeting	Include Gantt Charts
C.F.O	Weekly Status Report	Weekly Tuesdays at 9:00 am	Sanah Wong	High	in person meeting	Comptroller can assist with questions
Comptroller	Status Update	Weekly	Sanah Wong	Low	email	Mainly interested in budget control
Project Team	Timeline Review/Update	Daily by EOD	Project Team	High	team meeting	All team members are required to send report by EOD
Project Team	List of Blockers	As Needed	Project Team	Medium	email	Must meet with team when blockers arise


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