



Student Learning Outcomes Assessment Plan

Last Updated	10-3-2024
Effective for Academic Year(s)	2023-2024

College	College of Agriculture and Applied Sciences	Department	Technology, Design, and Technical Education
Degree/Major/Cert.	Technology Systems BS	Contact Person	Steve Williams

Mission or Purpose of Program

The Technology Systems program at Utah State University prepares students with the technical expertise, critical thinking, and leadership skills needed to drive innovation and enhance organizational performance in technology-driven industries. Graduates are equipped to integrate technology with business strategies while excelling in teamwork, communication, and ethical leadership.

Responsibility for Assessing Outcomes and Reviewing Results

List the committee or faculty members who are responsible for coordinating program assessment who meet regularly to review student performance and curriculum issues and make recommendations or decisions about program improvements at least annually.

Steve Williams, Kari Lamoureux, Nate Kramar, Trevor Robinson, Chad Painter, Michael Bailey, Chenese Boyle, Andrew Deceuster, Jerald Kellar

Plan for Assessing Student Learning Outcomes for Majors in this Program

What students should understand and be able to do upon completion of the program and the degree required to demonstrate mastery.

Student Learning Outcomes <i>Students will be able to ... (e.g. Demonstrate a basic understanding of the US political system.)</i>	Courses <i>Where outcome is taught and measured (e.g. POLS 1100).</i>	Direct Measurement Methods <i>Assignments, project, or artifact used in the course to measure student learning of outcome. (e.g. Quiz #1 and 5)</i>	Mastery Threshold <i>(e.g. "Meets Expectations" or higher on rubric, >75%)</i>
Students will be able to identify and assess potential hazards in various technological environments and develop effective control measures to mitigate risks.	TESY 3000	<ul style="list-style-type: none"> Midterm Final Exam 	Grade of 70% or higher

Students will develop and demonstrate a comprehensive understanding and application of essential human skills, including verbal and written communication, teamwork, project management, leadership, time management, accountability, and self-awareness	TESY 3020	<ul style="list-style-type: none"> • Course project and related assignments • Weekly Reading Groups • Final reflection paper 	Grade of 70% or higher on all assignments.
Students will be able to design and implement basic electronic systems using industry-standard tools, applying quantitative reasoning skills to solve complex problems.	TESY 3300	<ul style="list-style-type: none"> • Lab Reports • Final Exam 	Grade of 70% or higher
Students will apply theoretical knowledge to real-world scenarios through internships or senior projects, integrating skills from various technology disciplines to solve complex problems.	TESY 4250 TESY 4900	Final Report	Grade of 70% or higher
Students will be able to synthesize insights from industry professionals and course content to develop effective strategies for entering and thriving in the professional workforce, including networking techniques, managing work-life balance, overcoming career challenges, and leveraging personal strengths for professional success.	TESY 4000	Reflection Project	Grade of 60% or above
Students will demonstrate the ability to create and modify complex 3D models using advanced CAD/CADD software, applying principles of design for additive manufacturing and integrating these designs into computer-integrated manufacturing systems.	TESY 3040 TESI 3270	TESY 3040: Generative Design Project TESY 3270: Surface Modeling Assignment	Grade of 75% or higher

Graduates will exhibit comprehensive knowledge of various additive manufacturing technologies, processes, and materials, demonstrating proficiency in operating and troubleshooting 3D printing equipment for both prototyping and production applications.	TESY 3200	Final Design and Fabrication Project	Grade of 75% or higher
Students will analyze and implement computer-integrated manufacturing systems, showcasing the ability to optimize production processes by integrating additive manufacturing techniques with traditional manufacturing methods.	TESY 3030	Double-sided Maze Project	Grade of 75% or higher
Graduates will apply critical thinking and problem-solving skills to address complex manufacturing challenges, utilizing their understanding of advanced manufacturing principles to propose and implement innovative solutions in real-world scenarios.	TESY 3210	Injection Mold Design Project	Grade of 75% or higher
Students can architect, deploy, and manage cloud-based systems, demonstrating proficiency in cloud computing concepts, services, and best practices.	TESY 4730	Midterm Exam EC2 Lab	A grade of 75% or higher Lab completion at 90%
Students will demonstrate knowledge of network protocols and data.	TESY 4750	Wireshark Lab: TCP	Complete Wireshark lab with a >75%
Students will demonstrate knowledge of ITIL service management processes	TESY 4760	Final Exam and Final project creating a disaster recovery document.	Pass the final exam and the final project >75%

Students will design, implement, and maintain database systems, demonstrating proficiency in database administration tasks, performance tuning, and data security measures.	TESY 4770	Final Exam and all labs	Complete all labs and final exam >75%
Students will demonstrate the ability to write scripts for cybersecurity purposes.	TESY 4850	Port scanning assignment	Complete final scripting project 80%
Students will demonstrate knowledge of ITIL service management processes	TESY 4760	Final Exam and Final project creating a disaster recovery document.	Pass the final exam and the final project >75%
Students will demonstrate an understanding of techniques and practices for securing servers	TESY 4810	Final exam	>75%
Students will demonstrate the correct penetration testing principles and methodologies.	TESY 4820	Lab: Designing a Secure Network Topology Penetration testing assessment document	Lab completion – 90%
Students will demonstrate knowledge of security monitoring techniques.	TESY 4830	uCertify lesson 5 labs	>75%
Students will analyze system security and mitigation strategies.	TESY 4840	Penetration testing exercise	Completion of the final exercise with a >75%
Students will be able to create complex 3D models and assemblies using advanced CAD techniques, demonstrating proficiency in parametric modeling, proper dimensioning and tolerancing, and efficient project management strategies.	TESY 2200	Multi-part assembly using advanced mates assignment	Grade of 85% or higher
Students will be able to execute advanced CAD operations, including complex surface modeling, and large assembly management.	TESY 3270	Surface Modeling Helmet Assignment	Grade of 85% or higher

<p>Students will be able to develop and implement comprehensive product innovation strategies, utilizing various methodologies such as design thinking and agile development, to guide a product from initial concept through to market launch while considering user needs, technological feasibility, and market trends.</p>	<p>TESY 4330</p>	<p>High-fidelity prototype assignment</p>	<p>Grade of 85% or higher</p>
<p>Students will be able to navigate the complex landscape of intellectual property rights in product development, demonstrating the ability to identify, protect, and strategically manage various forms of IP (including patents, trademarks, and trade secrets) throughout the product lifecycle and across global markets.</p>	<p>TESY 4300</p>	<p>Design patent project</p>	<p>Grade of 75% or higher</p>