Millersville University
Technology Education

STANDARDS MATRIX SUMMARY

All course data is based on self-reporting by individual instructors.

REQUIRED COURSES FOR EDTE
0=Not Met 1=Met 2=Strongly Met

COURSE OBJECTIVES ASSOCIATED WITH STANDARD
numbers alone indicate objective; CO indicates course outline

COURSE ASSESSMENTS RELATED TO STANDARD Assessment Tool Codes: Quiz (Q); Test (T); RS (Rating Scale); RU (Rubric); P (Project); W (Written Assignment); OP (Oral Presentation); OB (Observation); LA - lab assignment; O (Other, specify)

		ITEC 110	ITEC 120	ITEC 130	ITEC 135	ITEC 241	ITEC 251	ITEC 261	ITEC 262	ITEC 271	ITEC 281	EDTE 291	EDTE 391	EDTE 491	TOTAL	Percent	ITEC 110	ITEC 120	ITEC 130	ITEC 135	ITEC 241	ITEC 251	ITEC 261	ITEC 262	ITEC 271	ITEC 281	EDTE 291	EDTE 391	EDTE 491	ITEC 110	ITEC 120	ITEC 130	ITEC 135	ITEC 241	ITEC 251	ITEC 261	ITEC 262	ITEC 271	ITEC 281	EDTE 291	EDTE 391	EDTE 491
ITEA/CTTE/NCATE Curriculum Standards																																										
1-The Nature of Technology	Knowledge	Explain the characteristics and scope of technology	2	0	0	2	1	1	0	0	2	0	1	1	0	10	38%	2, 8			7	1,7	1					4	1,2,3		Q, P, OP				T	LA	T P				W P	T,RS,RU	
		Compare the relationship among technologies and the connection between technology and other disciplines.	1	0	0	1	1	1	0	0	2	1	1	1	0	9	35%	6		10	7	7,8,14	4			7	2	4	3,5		OP			T	T	LA	P			Q,T	OP, W	W P	T,RS,RU	
	Performance	Apply the concepts and principles of technology when teaching technology in the classroom and laboratory.	1	0	0	2	2	1	0	0	1	1	1	1	0	10	38%	3, 7			6	7,8,9,10,14	5, 6				2, 3	6	11		P				T,W,P	LA	LA				O (their observation of teaching style)	W P	RS	
	Disposition	Comprehend the nature of technology in a way that demonstrates sensitivity to the positive and negative aspects of technology in the world.	2	1	0	0	1	1	0	0	1	1	1	1	0	9	35%	8	1,3			CO-I(B)	1			6	4	6	7		OP P	T,P,RS			DISCUSSION	P			Q,T	W, OB	W P	RU	
2-Technology & Society	Knowledge	Compare the relationships between technology and social, cultural, political, and economic systems.	2	1	0	0	1	1	0	0	1	0	1	0	0	7	27%	2, 8	1			CO-I(B)	1					1, 2			OP	T			OB	OP					T		
		Assess the role of society in the development and use of technology.	0	0	0	0	1	1	0	0	1	0	1	0	0	4	15%					CO-I(B)	3					1, 2							OB	OP					T		
		Assess the importance of significant technological innovations on the history of human kind.	1	0	0	0	1	1	0	0	1	2	1	0	0	7	27%	6				CO-I(B)	1, 3				3, 4, 9	1, 2			OP				OB	OP				T, W	T		
	Performance	Judge the effects of technology on the environment.	1	1	0	0	2	1	0	0	2	1	1	0	0	9	35%	6, 8	1			CO-I(B)	1				Not listed	2			OP	T			OB	OP					T		
		Evaluate the relationship between technology and social institutions such as family, religion, education, government, and workforce.	0	0	0	0	2	1	0	0	1	0	1	0	0	5	19%					CO-I(B)	1					4							OB	OP					T		
	Disposition	Demonstrate the sensitivity to appropriate and inappropriate uses of technology and its effects on society and the environment.	0	1	0	0	1	1	0	0	1	0	1	0	0	5	19%		1,3			7,CO-I(D)	6					1, 4				T,P,RS			OB	OP					T		
		Make decisions based on knowledge of intended and unintended effects of technology on society and the environment.	1	1	0	0	1	1	0	0	0	1	1	0	0	6	23%	8	3			CO-I(D)	1,6				Not listed	2			Q T	P,RS			OB	OP					T		
3-Design	Knowledge	Explain the importance of design in the human-made world.	2	0	0	0	1	1	0	0	2	1	1	0	0	8	31%	2				I(D)	5					2			P Q T				OB	P					OP		
		Describe the attributes of design.	2	0	0	2	0	1	0	0	2	0	1	0	0	8	31%	3			6		5					2			P Q T				P,W		P				OP		
		Analyze the engineering design process and principles.	0	0	0	2	0	1	0	0	1	0	1	0	0	5	19%				6		5					2							T		P				OP		
	Performance	Apply the process of troubleshooting, research and development, invention, innovation, and experimentation in developing solutions to a design problem.	2	0	0	2	0	1	1	1	2	0	1	0	0	10	38%	1			6		2, 5	1, 3, 4, 5	1,2,3,4,6,8,9	6		8, 9, 10			OP				P,W		P	T, RS, P W	LA,P, W,T	Q,P,W		OP			
	Disposition	Investigate the relationship between designing a product and the impact of the product on the environment, economy, and society.	2	0	0	1	0	1	0	0	0	0	1	0	0	5	19%	8			6		5			7		8, 9, 10			OP				T,P		P			OP,P		OP		
4- Abilities for a Technological World	Knowledge	Select design problems and include appropriate criteria and constraints for each problem.	1	0	0	0	1	1	0	0	2	0	1	1	2	9	35%	3				6	3					2, 10	12	2	LA					LA	P					P	W	RS, RU, OP, W
		Evaluate a design, assessing the success of a design solution, and develop proposals for design improvements.	0	0	0	2	0	1	0	0	2	0	1	0	0	6	23%						5			7		10							P		P		PRODUCT SURVEY		P			
		Analyze a designed product, and identify the key components of how it works and how it was made.	2	0	0	2	0	1	0	2	2	0	1	0	0	10	38%	6					5		2,5,6,8,9	7		10			P				P		P		P,W,T	T		P			
		Operate and maintain technological products and systems.	2	2	2	0	1	1	1	1	2	0	1	0	0	13	50%	3, 5	4,5,7,8,9	3		3,4,8,9,2	6	1, 3, 4, 5	2,3,6,8			10			P	LA,T	P		LA	P	Q, T, OB, LA, P, RS	LA,P, W			P			
		Develop and model a design solution.	2	1	0	0	1	1	0	1	2	0	1	0	0	9	35%	3, 5	7,8,9			4,6	2		1,2,8,9			6, 10			P OP	LA,T			LA	P		T			P		
		Complete an assessment to evaluate merits of design solutions.	0	1	0	0	0	1	0	0	2	0	1	0	2	7	27%		3				7					2		2		LA				P						P		RS, RU, OP, W
	Performance	Operate a technological device and/or system.	2	1	2	2	1	1	2	2	2	0	1	0	0	16	62%	4	4,5,7,8,9	4		8	3,4,8,9,2	5	1, 3, 4, 5	2,4,5,6		10			P	LA,T	P		P,OB	LA	P	Q, T, OB, LA, P, RS	LA,P			P			
		Diagnose a malfunctioning system, restore the system, and maintain the system.	1	1	0	1	1	1	2	2	0	1	1	0	0	11	42%	1	7,8,9		6	2,8	5, 7	5	4		3	10			LA	LA			P,OB	LA	P	T, OB, LA, P, RS	LA,P,T		OB	P			
		Investigate the impacts of products and systems on individuals, the environment, and society.	1	1	0	2	1	1	1	0	1	0	1	0	0	9	35%	8	3		10	CO-I(B)	1	6				2, 10			OP	LA			OB	P	T, O (class discussion)				P			
	Disposition	Assess the impacts of products and systems.	1	1	2	2	1	1	1	0	1	0	1	0	0	11	42%	1, 8	3	11	10	7	2	6				10			OP	LA	T		LA	P	T, O (class discussion)				P			
		Follow safe practices and procedures in the use of tools and equipment.	1	2	2	2	1	1	2	2	2	0	1	0	0	16	62%	4	4,5,7,8,9	3		8	CO-II,III	6	2, 3, 4, 5	5,6	2,3		2			OP	LA,T	P	P,T	LA	P	T, RS, P, OB, LA	LA,P	Q,T,OB			P			
		Judge the relative strengths and weaknesses of a designed product from a consumer perspective.	0	1	0	2	0	1	0	2	2	2	1	0	0	11	42%		3		6		1		2,8,9		2	2,10				LA		P,OB,W		P		P,W,T		P	P			
		Exhibit respect by properly applying tools and equipment to the processes for which they were designed.	1	2	2	2	2	1	2	2	2	0	1	0	0	17	65%	5	4,5,7,8,9	3		8	2,4,9,12	6	1, 2, 3, 4, 5	5,6	5,6		1, 10			P	LA	P	P,T	LA	P	T, RS, P, OB, LA	LA,P	OB,P			P			
		Design and use instructional activities that emphasize solving real world open-ended problems.	0	0	0	0	0	0	1	0	0	2	2	1	1	2	9	35%					7				3	6, 5	12	2							P			NA (not assessed)	P	W	RS, RU, OP, W
5-The Designed World	Knowledge	Analyze the principles of various medical technologies as part of a designed world.	0	0	0	0	0	0	0	0	2	0	1	0	0	3	12%								2,3,5,6,8,9				12										P,W,T					
		Analyze the principles of various agricultural and related biotechnologies as part of the designed world.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%																											
		Analyze the principles, concepts and applications of energy and power technologies as part of the designed world.	0	1	0	1	0	0	2	0	0	0	1	1	0	6	23%		1,2,3,4,5,6,7,8,9,			7			1, 3, 4, 5			2	12			LA		T				Q, T, OB, LA, W, P, RS				P	W	
	Knowledge	Analyze the principles, concepts and applications of information and communication technologies as part of a designed world.	2	0	0	1	1	2	0	0	0	0	1	1	0	8	31%	2			7	1,7	1					2	12		Q T				T	LA	T				P	W	
		Analyze the principles of various transportation technologies that are part of the designed world.	0	1	0	0	0	0	0	0	0	1	1	1	0	4	15%		4,5									2	12			LA,T									P	W	
		Analyze the principles, concepts, and applications of manufacturing technologies as part of the designed world.	0	0	2	2	1	0	0	0	2	1	1	1	0	10	38%			4	3,5	8,11				4	1, 2, 3, 5, 6, 7, 8, 9, 10, 11	2	12					P	P,T,OB	LA			Q,T	T, P, W, OB		P	W	
		Analyze the principles, concepts, and applications of construction technologies as part of the designed world.	0	0	0	2	0	0	0	0	0	1	1	1	0	5	19%				3,5						3, 10	2	12						T					T, P, OB	P	W	
	Performance	Select and use appropriate technologies in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communication, transportation, manufacturing, and construction.	0	0	0	0	1	1	1	1	1	0	1	1	0	7	27%					7,12,8	3, 5	1, 4, 5	2,8,9	7		5, 10	12							LA	P	LA, P, RS	T	Q,T			LA		
	Disposition	Effectively use and improve technologies in a variety of contexts including medical, agricultural and related biotechnologies, energy and power applications, information and communication, transportation, manufacturing, and construction.	0	1	0	0	1	1	1	1	0	0	1	0	0	6	23%		7,8,9			7,12,9	3, 5	1, 4, 5	1,2,8,9			5, 10				LA,T			LA	P	LA, P, RS	LA,T				LA		
6-Curriculum	Knowledge	Identify appropriate content for the study of technology at different grade levels.	0	0	0	0	0	0	0	0	0	0	1	1	1	3	12%											2	6	2											P T	W	RS, RU, OP, W
		Integrate technological content from other fields of study.	0	0	0	2	0	0	0	0	2	0	1	1	1	7	27%				9							6	3,4,5	2				W							P T	W,T,RU	RS, RU, OP, W
		Identify curriculum and instructional materials and resources that enable effective delivery when teaching about technology.	0	0	0	0	0	0	0	0	0	0	1	1	2	6	23%									2, 4		2, 5	9,12	2									W		P T	W,T,RU	RS, RU, OP, W
	Performance	Engage in long-term planning that results in an articulated curriculum based on standards for Technological Literacy for grades K-12 or equivalent.	0	0	0	0	0	0	0	0	0	0	1	1	2	4	15%											2, 4	7	2											P T	W	RS, RU, OP, W
		Design technology curricula and programs that integrate content from other fields of study.	0	0	0	0	0	0	0	0	0	0	1	1	1	3	12%											5, 10	7	2											P T	W	RS, RU, OP, W
		Improve the technology curriculum by making informed decisions using multiple sources of information.	0	0	0	0	0	1	0	0	0	0	1	1	1	4	15%						7					6	7,9	2						P					P T	W,RU	RS, RU, OP, W
		Incorporate up-to-date technological developments into the technology curriculum.	1	0	0	0	0	0	1	0	0	1	1	1	1	7	27%	8, 7, 3					5				2, 9, 10	5, 10	6,9	2	P					P			NA (not assessed)	P T	W,RU	RS, RU, OP, W
		Implement a technology curriculum that systematically expands the technological capabilities of the student.	0	0	0	0	0	0	1	0	0	2	1	1	1	7	27%						5					2, 5, 10	12	2							P				P T	W,T	RS, RU, OP, W
	Disposition	Demonstrate sensitivity to cultural, ethnic diversity, special needs, interests, abilities, and gender issues when selecting, designing, or evaluating curriculum and instructional materials.	0	0	0	0	0	0	0	0	0	0	1	1	1	3	12%									7		6	12	2									W		P T	W	RS, RU, OP, W
7-Instructional Strategies	Knowledge	Base instruction on contemporary teaching strategies that are consistent with Standards for Technological Literacy.	0	0	0	0	0	0	1	0	0	1	1	1	1	6	23%						1					6	6	2						Q				PT	W,T,RU	RS, RU, OP, W
		Apply principles of learning and consideration of student diversity to the delivery of instruction.	0	0	0	0	0	0	1	0	0	1	1	1	1	6	23%						5					5	8,11	2						P				OB	W,RU	OP, W
		Compare a variety of instructional strategies to maximize student learning about technology.	0	0	0	0	0	0	1	0	0	1	0	1	1	5	19%						5					6	11	2						P				P	W,OB	RS, RU, OP, W
		Describe a variety of student assessments appropriate for different instructional materials.	0	0	0	0	0	0	1	0	0	2	0	1	1	2	7	27%					5					6	10	2, 5						P				P	W,T	RS, RU, OP, W
	Performance	Apply appropriate materials, tools, equipment, and processes to enhance student learning about technology.	0	0	0	2	0	1	0	0	2	1	1	1	1	9	35%				6,8		5			1,2,3,4,5,6,7	2, 3, 5, 6, 7, 8, 9, 10, 11	8, 9	11	2				P			P		P	P,OP, W	OB	P	OB	RS, RU, OP, W
		Assess instructional strategies to improve teaching and learning in the technology classroom by using self-reflection, student learning outcomes, and other assessment techniques.	0	0	0	0	0	0	0	0	2	0	1	1	2	6	23%											6, 8, 9	13,8	2											OP	W	RS, RU, OP, W
	Disposition	Exhibit an enthusiasm for teaching technology by creating meaningful and challenging technology learning experiences that lead to positive student attitudes toward the study of technology.	0	0	2	0	0	0	0	0	0	1	1	1	2	9	35%											10	7,12	2											P	W	RS, RU, OP, W
8-Learning Environments	Knowledge	Recognize rich learning environments that provide for varied educational experiences in the technology classroom and laboratory.	0	0	2	0	0	0	0	0	0	2	0	1	1	2	8	31%										2	7	2, 4											P		RS, RU, OP, W
		Identify learning environments that encourage, motivate, and support student learning, innovation, design, and risk taking.	0	0	0	0	0	0	0	0	0	1	0	1	1	2	5	19%										2	7	2, 3, 4											P		RS, RU, OP, W
	Performance	Design learning environments that establish student behavioral expectations that support an effective teaching and learning environment.	0	0	0	0	0	0	0	0	0	1	0	1	0	1	3	12%										2		3, 4											P		RS, RU, OP, W
		Create flexible learning environments that are adaptable for the future.	0	0	0	0	0	0	0	0	0	2	1	1	1	0	5	19%										2	12												P	W	
	Disposition	Exhibit safe technology laboratory practices by designing, managing, and maintaining physically safe technology learning environments.	0	0	0	2	0	1	0	0	2	1	1	1	1	9	35%				3,8		6			1,2,3,4,5	1, 5, 6, 7, 8, 9, 10, 11	5, 10	OTHER (FIELD EXPER)	2				P,OB		P OP			OP	T, P, OB	OB	RS	W, O (Class Discussion)
9-Students	Knowledge	Design technology experiences for students of different ethnic, socioeconomic backgrounds, gender, age, interest, and exceptionalities.	0	0	0	0	0	0	0	0	0	0	1	1	2	4	15%											5, 10	7	2, 5											OP	W	RS, RU, OP, W
		Identify how students learn technology most effectively by integrating current research about hands-on learning and learning about the content of technology.	0	0	0	0	0	0	0	0	0	1	0	1	1	4	15%											8, 9	3,4	2											OP	W	RS, RU, W, O (Class Discussion)
	Performance	Create technology experiences for students with different abilities, interests, and ages about the content of technology.	0	0	0	0	0	0	0	0	2	0	1	1	1	5	19%											8, 9, 10	12	2, 5											OP	W,RW	RS, RU, OP, W
	Disposition	Develop productive relationships with students so that they become active learners about technology and enhance their human growth and development.	0	0	0	0	0	0	1	0	0	1	1	1	1	0	5	19%						8				7	4								OP		P, OB	OP	T		
10-Professional Growth	Knowledge	Demonstrate a continuously updated and informed knowledge base about the processes of technology.	0	0	0	0	0	0	1	0	0	2	1	1	1	7	27%						1			7,8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	3	6,9	2						Q T			W,OP	T, P, W, OB	T	W	OP, W
		Continuously build upon effective instructional practices that promote technological literacy.	0	0	0	0	0	0	1	0	0	1	1	1	1	0	5	19%						4		7,8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	6	6,9							OP			W,OP	OB	T	W	
		Apply various marketing principles and concepts to promote technology education and the study of technology.	0	0	0	0	0	0	0	0	0	0	1	1	0	2	8%											3	1,2												T	W	
		Collaborate with other candidates and professional colleagues to promote professional growth and professional development activities.	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	12%									No objective listed	7	12											P, OB	T W	W	
	Performance	Become actively involved in professional organizations and attend professional development activities to become better prepared to teach technology education.	0	0	0	0	0	0	1	0	0	1	1	1	2	0	6	23%						8			No objective listed	7	CONFATTEND							OP			NA (not assessed) promoting active membership	T W	W	
		Develop a professional development plan for self-improvement in curriculum and instruction in technology education.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	8%										7												T W		
		Value continuous professional growth through involvement in a variety of professional development activities.	0	0	0	0	0	0	1	0	0	1	1	1	1	0	5	19%						8			No objective listed	7	9,7,8,11,12							OP			NA (not assessed) promoting active membership	T W	T,RS,RU,W,P	
	Disposition	Demonstrate the importance of professionalism by promoting technology organizations for students in the technology classroom.	0	0	0	0	0	1	0	0	1	1	1	2	0	6	23%						8				No objective listed	7	9							OB OP			NA (not assessed) promote professionalism in the class	T W	T	
		Reflect upon their teaching to improve and enhance student learning.	0	0	0	0	0	0	0	0	1	0	1	1	2	5	19%										3, 7	13	2, 5											T W	GROUP DISCUSSION	RS, RU, OP, W