ABET to ET- Electronics Discipline SLO Map

ABET SO	ET Electronic Discipline SLO	Measurable Outcomes from annual self-assessment report
(1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline;	1. Adhere to safety procedures and proper electronics fabrication techniques. *NOTE: Rework is one of these covered techniques.* 2. Identify active and passive components, design, construct, and test various DC and AC circuits to include filters as well as constructing a Bode Plot of an amplifier's frequency and phase response. *NOTE: Troubleshooting and repair is inherent to this outcome. All analysis of AC circuits is accomplished using complex numbers and the necessary underlying algebra and trigonometry.* 3. Construct, analyze and test the operation of various types of microprocessor/microcontroller circuits. Writing programs to control other devices is a critical aspect of testing the operation. *NOTE: Troubleshooting and repair is inherent to this outcome.*	**SLO 1.** Measurable Outcome A.1. Demonstrate proper electronics fabrication techniques. *NOTE: Rework is one of these covered techniques.* **SLO 2**. Measurable Outcome B.1. Identify passive components. B.2. Identify active components. B.3. Construct, and test various DC and AC circuits. *NOTE: Troubleshooting and repair is inherent to how these outcomes are accomplished. Since, circuits cannot be built and work in a LAB setting without problems that must be troubleshot and repaired. All analysis of AC circuits is accomplished using complex numbers and the necessary underlying algebra and trigonometry.* **SLO 3.** C.1. Construct, analyze and test different types of digital circuits. *NOTE: Troubleshooting and repair is inherent to how these outcomes are accomplished. Since, circuits cannot be built and work in a LAB setting without problems that must be troubleshot and repaired.* - C.2. Construct, analyze, program and test different control systems using microprocessor/microcontroller circuits. *NOTE: Troubleshooting and repair is inherent to how these outcomes are accomplished. Since circuits, especially ones with programed processors cannot be built and work in a LAB setting without hardware and software problems that must be troubleshot (debugged for software) and repaired.*

	For Bench Tech and Defense Contractor Tech Emphasizes. 5. Demonstrate common modulation/transmission methods to including AM, FM, and Pulse modulation. *NOTE: Troubleshooting and repair is inherent to this outcome. All analysis of AC circuits is accomplished using complex numbers and the necessary underlying algebra and trigonometry.* **For Defense Contractor Tech Emphasis.** 5. Demonstrate a working knowledge of common PCs and computer networks. *NOTE: Troubleshooting and repair is inherent to part of this outcome.* **For Bio-Medical Equip Emphasis.** 5. Characterize the computers/ networks used in the healthcare industry, demonstrate an ability to explain fluid dynamics, common medical terminology, health-care dynamics, and the fundamentals functional characteristics of the human body. *NOTE: Troubleshooting and repair* *is inherent to part of this outcome.*	**For Bench Tech and Defense Contractor Emphasizes.** **SLO 5.** Measurable Outcome E, where students demonstrate a working knowledge of common modulation and transmission methods to include such as AM, FM and Delta modulation. *NOTE: Troubleshooting and repair is inherent to how these outcomes are accomplished. Since, circuits cannot be built and work in a LAB setting without problems that must be troubleshot and repaired.* **For Defense Contractor Emphasis.** **SLO 5.** Measurable Outcome EE. Demonstrate a working knowledge of common PCs and computer networks. *NOTE: Troubleshooting and repair is inherent to part of this outcome.* **For Bio-Medical Equip Tech Emphasis.** **SLO 5.** Measurable Outcome F. Demonstrated understanding of computers, computer networks and fluid dynamics along with an understanding of medical terminology, health-care dynamics, and the fundamentals of the functional characteristics of the human body. *NOTE: Troubleshooting and repair is inherent to part of this outcome.*
(2) an ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline;	1. Adhere to safety procedures and proper electronics fabrication techniques. 2. Identify active and passive components, design, construct, and test various DC and AC circuits to include filters as well as constructing a Bode Plot of an amplifier's frequency and phase response. 3. Construct, analyze and test the operation of various types of microprocessor/microcontroller circuits. Writing programs to control other devices is a critical aspect of testing the operation.	**SLO 1.** Measurable Outcome A.1. Demonstrate knowledge of safety procedures and proper electronics fabrication techniques. **SLO 2**. Measurable Outcome B.1. Identify passive components. B.2. Identify active components. B.3. Construct, and test various DC and AC circuits. **SLO 3.** C.1. Construct, analyze and test different types of digital circuits.

		- C.2. Construct, analyze, program and test different control systems using microprocessor/microcontroller circuits.
	For Bench Tech and Defense Contractor Tech Emphasizes. 5. Demonstrate common modulation/transmission methods to including AM, FM, and Pulse modulation.	**For Bench Tech and Defense Contractor Emphasizes.** **SLO 5.** Measurable Outcome E, where students demonstrate a working knowledge of common modulation and transmission methods to include such as AM, FM and Delta modulation.
	For Defense Contractor Tech Emphasis. 5. demonstrate a working knowledge of common PCs and computer networks.	**For Defense Contractor Emphasis.** **SLO 5.** Measurable Outcome EE. Demonstrate a working knowledge of common PCs and computer networks.
	For Bio-Medical Equip Emphasis. 5. Characterize the computers/ networks used in the healthcare industry, demonstrate an ability to explain fluid dynamics, common medical terminology, health-care dynamics, and the fundamentals functional characteristics of the human body.	**For Bio-Medical Equip Tech Emphasis.** **SLO 5.** Measurable Outcome EE. Demonstrate a working knowledge of PCs and computer networks. .Measurable Outcome F. Demonstrated understanding of computers, computer networks and fluid dynamics along with an understanding of medical terminology, health-care dynamics, and the fundamentals of the functional characteristics of the human body.
(3) an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate	General Education courses for English and Communications. 4. Demonstrate commitment to quality, timeliness, continuous improvement, professional ethics, and respect for diversity while showing an understanding of the need for and an ability to engage in continuing professional development.	- English Composition Courses - Communication courses on Oral or Business Com. **SLO 4.** Measurable Outcome D.2. Demonstrate an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature. *Note: Assessment based upon final course project in ET228B which requires written and oral reports.*

technical literature.		
(4) an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results	2. Identify components, design, construct, and test various circuits to include filters and construct a Bode Plot of an amplifier's frequency response. 3. Construct, analyze and test various types of digital circuits and microprocessor/ microcontroller circuits. Demonstrate a working knowledge writing programs to control other devices. 5. For the Bench Technician and Defense Contractor Technician emphases, demonstrate a working knowledge of common modulation and transmission methods to include such as AM, FM, and Pulse modulation. 5. For the Biomedical Equipment Technician emphasis, characterize the computers/networks used in the healthcare industry, demonstrate an ability to explain fluid dynamics, common medical terminology, health-care dynamics, and the fundamentals functional characteristics of the human body.	**SLO 2.** Measurable Outcome: B.3. Construct, and test various DC and AC circuits. **Courses:** ET220B and ET228B **SLO 3.** Measurable Outcomes: **- C.1**. Construct, analyze and test different types of digital circuits. **- C.2.** Construct, analyze, program and test different control systems using microprocessor/microcontroller circuits. **SLO 5.** Measurable Outcome: E. For Bench and Government support Emphases, demonstrate a working knowledge of common modulation and transmission methods to include such as AM, FM and Delta modulation. *Involves the construction, analysis, and testing of AM, FM and Delta modulation circuits during ET293B Labs.* **SLO 5.** Measurable Outcome: F. For the Biomedical Equipment Emphasis. *Involves CIT114B Final Practical /Project on building and configuration a PC's and OS installation and configuration to include drivers. Along with CIT112B CompTIA Net Plus Labs.*
(5) an ability to function effectively as a member of a technical team.	4. Demonstrate commitment to quality, timeliness, continuous improvement, professional ethics, and respect for diversity while showing an understanding of the need for and an ability to engage in continuing professional development.	**SLO 4.** Measurable Outcome D.3. Function effectively as a member of a technical team. *Note: Based upon teamwork on Labs (teams of 2-3) and final course project (teams of 3-4).*

		All Measurable Outcomes from annual self-assessment report that depend upon results from Labs from the following courses that require Lab to be accomplished by Teams of two or three members for courses: CIT112B, ET132B, ET228B, and ET293B.

The Latest Annual assessment report is available upon request.